USER MANUAL

Widescreen LCD Quad Display

Wide 19”, 22” Screen Size

Widescreen LCD Quad Display
Models
NQW922
NQW819

Widescreen LCD Drawer
Models
NQW119

4:3 LCD Quad Display

17", 19", 20" screen size

4:3 LCD QuaD Display
Models
NPQ817 / NPQ919 / NPQ1020

4:3 LCD Display
Models
NPQ117 / NPQ119 / NPQ120

Options: - DC Power

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1.1 Important Safeguards

Please read all of these instructions carefully before you use the device. Save this manual for future reference.

What the warranty does not cover

- Any product, on which the serial number has been defaced, modified or removed.

- Damage, deterioration or malfunction resulting from:
  - Accident, misuse, neglect, fire, water, lightning, or other acts of nature, unauthorized product modification, or failure to follow instructions supplied with the product.
  - Repair or attempted repair by anyone not authorized by us.
  - Any damage of the product due to shipment.
  - Removal or installation of the product.
  - Causes external to the product, such as electric power fluctuation or failure.
  - Use of supplies or parts not meeting our specifications.
  - Normal wear and tear.
  - Any other causes which does not relate to a product defect.

- Removal, installation, and set-up service charges.

1.2 Regulatory Notice

Legal Information

First English printing, October 2002
Information in this document has been carefully checked for accuracy; however, no guarantee is given to the correctness of the contents. The information in this document is subject to change without notice. We are not liable for any injury or loss that results from the use of this equipment.

Safety Instructions

- Unplug equipment before cleaning. Don't use liquid or spray detergent; use a moist cloth.
- Keep equipment away from excessive humidity and heat. Preferably, keep it in an air-conditioned environment with temperatures not exceeding 40° Celsius (104° Fahrenheit).
- When installing, place the equipment on a sturdy, level surface to prevent it from accidentally falling and causing damage to other equipment or injury to persons nearby.
- When the drawer is in an open position, do not cover, block or in any way obstruct the gap between it and the power supply. Proper air convection is necessary to keep it from overheating.
- Arrange the equipment's power cord in such a way that others won't trip or fall over it.
- If you are using a power cord that didn't ship with the equipment, ensure that it is rated for the voltage and current labeled on the equipment's electrical ratings label. The voltage rating on the cord should be higher than the one listed on the equipment's ratings label.
- Observe all precautions and warnings attached to the equipment.
- If you don't intend on using the equipment for a long time, disconnect it from the power outlet to prevent being damaged by transient over-voltage.
- Keep all liquids away from the equipment to minimize the risk of accidental spillage. Liquid spilled on to the power supply or on other hardware may cause damage, fire or electrical shock.
- Only qualified service personnel should open the chassis. Opening it yourself could damage the equipment and invalidate its warranty.
- If any part of the equipment becomes damaged or stops functioning, have it checked by qualified service personnel.

Regulatory Notices Federal Communications Commission (FCC)

This equipment has been tested and found to comply with the limits for a Class B digital device, pursuant to Part 15 of the FCC rules. These limits are designed to provide reasonable protection against harmful interference in a residential installation.
Any changes or modifications made to this equipment may void the user's authority to operate this equipment. This equipment generates, uses, and can radiate radio frequency energy and, if not installed and used in accordance with the instructions, may cause harmful interference to radio communications.
However, there is no guarantee that interference will not occur in a particular installation. If this equipment does cause harmful interference to radio or television reception, which can be determined by turning the equipment off and on, the user is encouraged to try to correct the interference by one or more of the following measures:

- Re-position or relocate the receiving antenna.
- Increase the separation between the equipment and receiver.
- Connect the equipment into an outlet on a circuit different from that to which the receiver is connected.

1.3 Before Installation

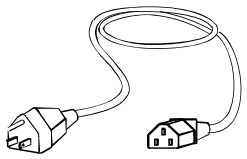
- It is very important to locate the Rackmount LCD Drawer / Display in a suitable environment.
- The surface for placing and fixing the Rackmount LCD Drawer / Display should be stable and level or mounted into a suitable cabinet.
- Make sure the place has good ventilation, is out of direct sunlight, away from sources of excessive dust, dirt, heat, water, moisture and vibration.
- Convenience for connecting the Rackmount LCD Drawer / Display to the related facilities should be well considered too.

1.4 Unpacking

The LCD keyboard drawer comes with the standard parts shown on the package contents. Check and make sure they are included and in good condition. If anything is missing, or damage, contact the supplier immediately.

1.5 Optional Accessories

1. **Power Cord**
   - 1.1 IEC power cord
   - 1.2 NEMA 5-15 power cord (US)
   - 1.3 BS 1363 power cord (UK)
   - 1.4 CEE 7/4 power cord (German)
   - 1.5 AS 3112 power cord (Australia)



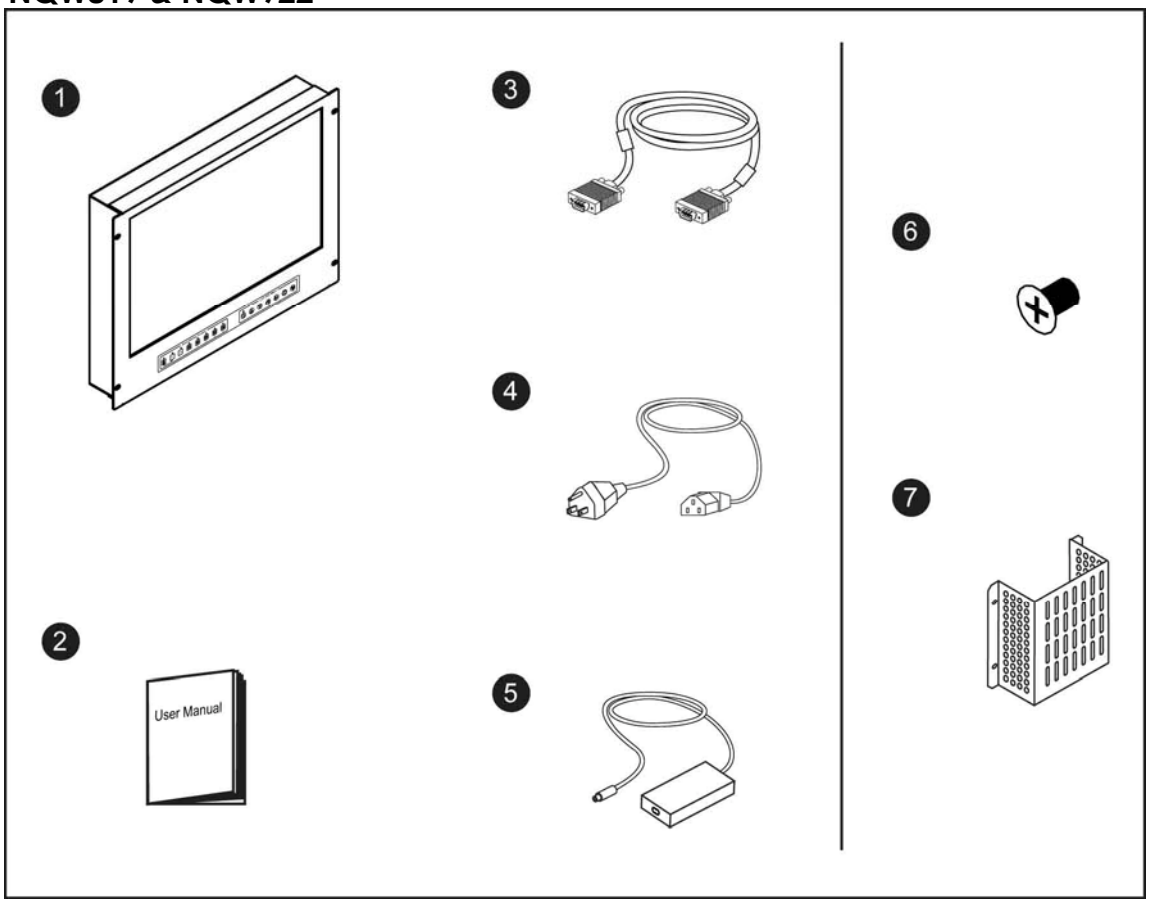
1.6 Peripheral Products

Item	Model No.	Description
Matrix Cat6 KVM	MC0116 / MC0216 / MC0316 MC1116 / MC1216 / MC2116 MC0132 / MC0232 / MC0332 MC1132 / MC1232 / MC2132	Matrix Cat6 16 port KVM Matrix IP Cat6 16 port KVM Matrix Cat6 32 port KVM Matrix IP Cat6 32 port KVM
Matrix DB-15 KVM	M018/ M028 / M038 M118 / M128 / M218 M0116 / M0216 / M0316 M1116 / M1216/ M2116	Matrix DB-15 8 port KVM Matrix IP DB-15 8 port KVM Matrix DB-15 16 port KVM Matrix IP DB-15 16 port KVM
Combo Cat6 KVM	NVC800 / NVCCE800 / NVCIP800 NVC1600 / NVCCE1600 / NVCIP1600 NVC3200/ NVCCE3200 / NVCIP3200	Combo Cat6 8 port KVM Combo Cat6 16 port KVM Combo Cat6 32 port KVM
Combo DB-15 KVM	NVS801 / NVCE800 / NVIP-802 NVS1601 / NVCE1600 / NVIP-1602	Combo DB-15 8 port KVM Combo DB-15 16 port KVM
PS/2 DB-15 KVM	NV401A / NV801A / NV1601A	4 / 8 / 16 port PS/2 DB-15 KVM
Keyboard Drawer	NK1 NK2	Rackmount keyboard drawer (with KVM options) Rackmount keyboard drawer (short depth version)

2.1 Package Contents

Chapter 2

NQW819 & NQW922



1 Rackmount LCD display x 1 pc

2 User manual x 1pc

3 6' VGA cable (male to male) x 1pc

4 Power cord x 1pc

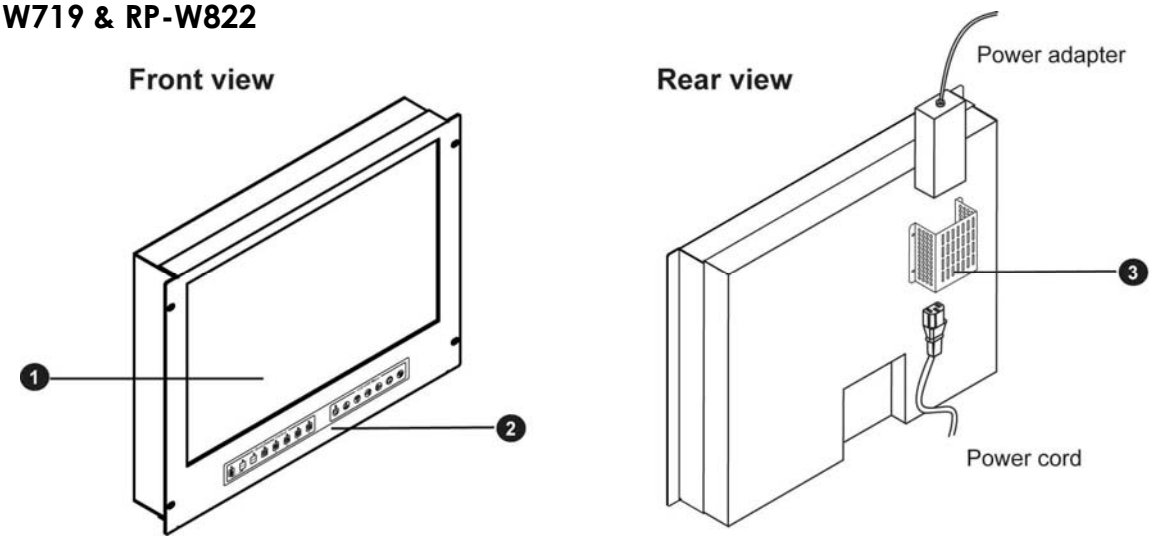
5 Auto switch power adapter x 1pc

6 M3.2*4.5mm screw x 4 pcs

7 Power adapter bracket x 1 pc

2.2 Structure Diagram

RP-W719 & RP-W822

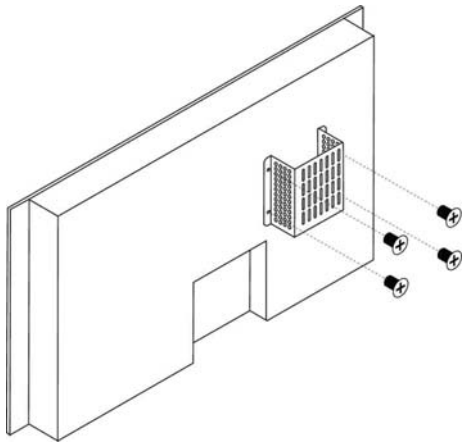


1 LCD interchangeable module kit

2 LCD membrane

3 Power adapter bracket

Power adapter bracket installation



M3.2*4.5mm screw x 4 pcs

2.3 Installation

NQW819

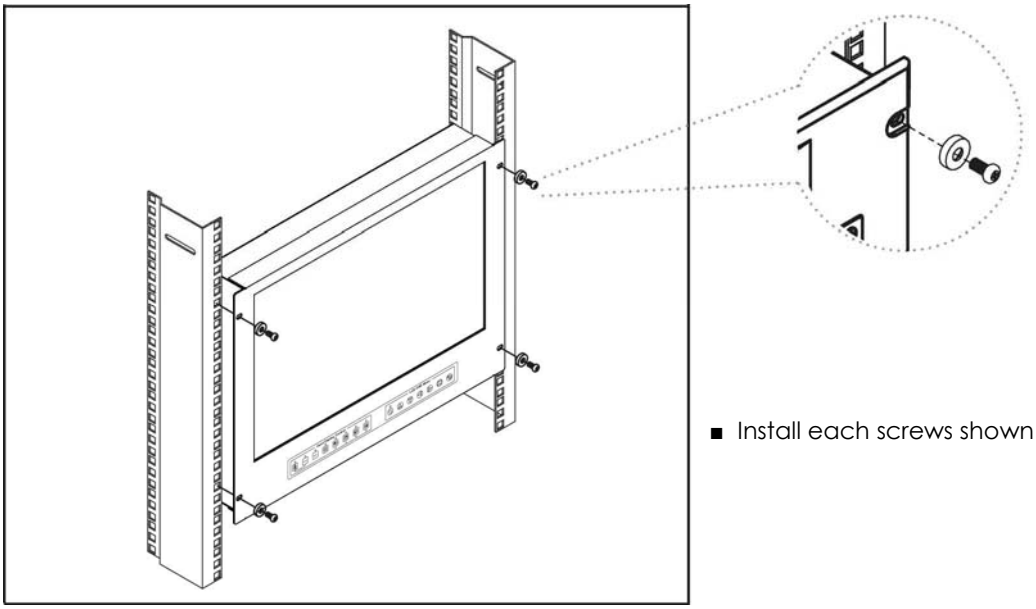


Figure 1.

- Install each screws shown in **Figure 1**.

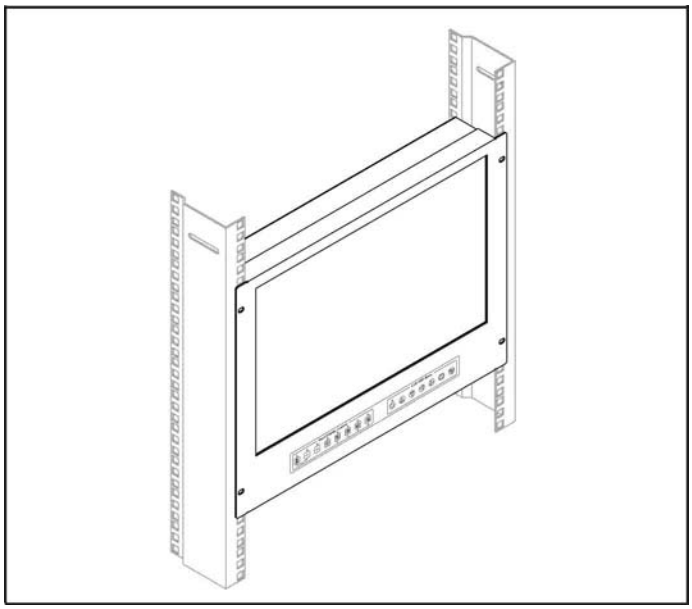


Figure 2.

- Fixed the LCD into the rack.

*** M6 screws are not provided.**

2.3 Installation

NQW922

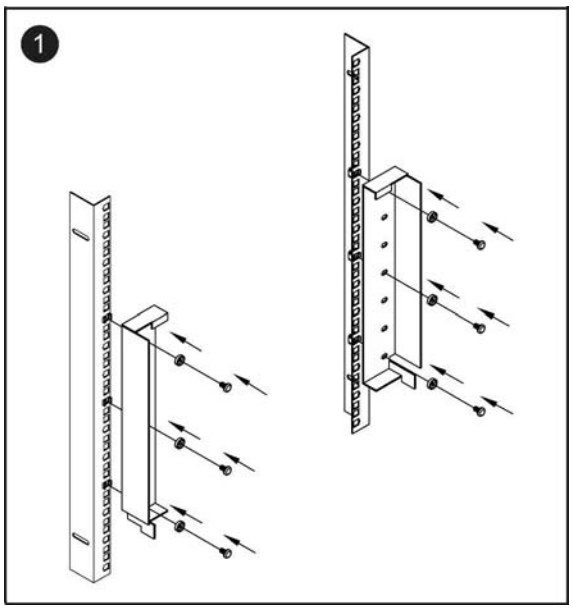


Figure 3.

- Install each screw shown in **Figure 3**.
  *** M6 screws are not provided.**

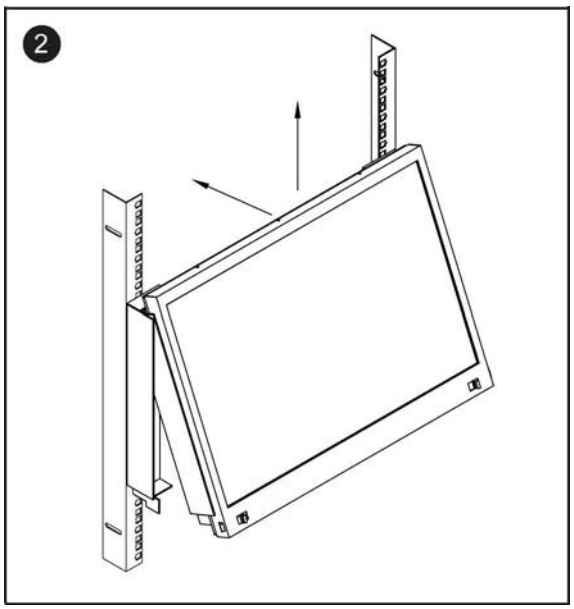


Figure 4.

- Insert the upper part of the LCD display to the rack shown in **Figure 4**.

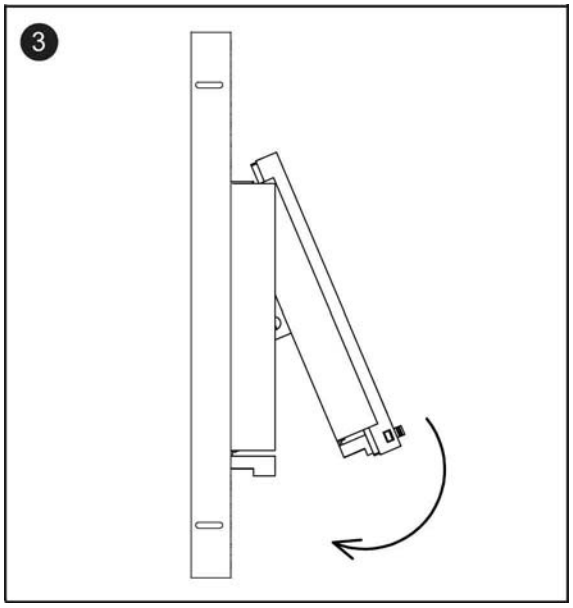


Figure 5.

- Push the lower part of the LCD into the rack.

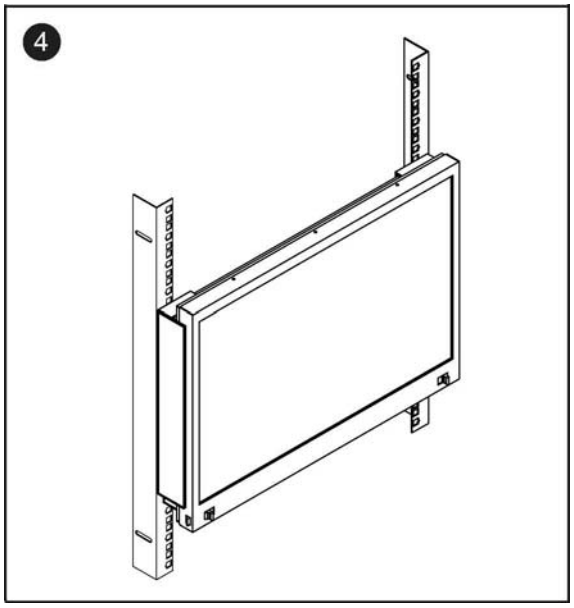
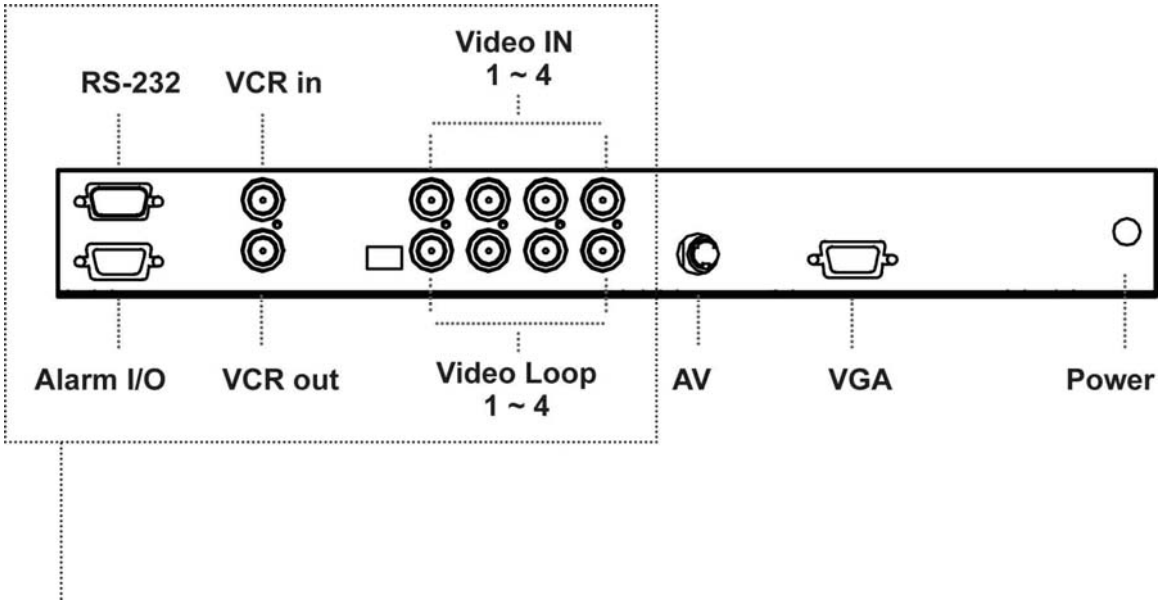


Figure 6.

- Installation completed.

2.4 Connection

NQW819 & NQW922



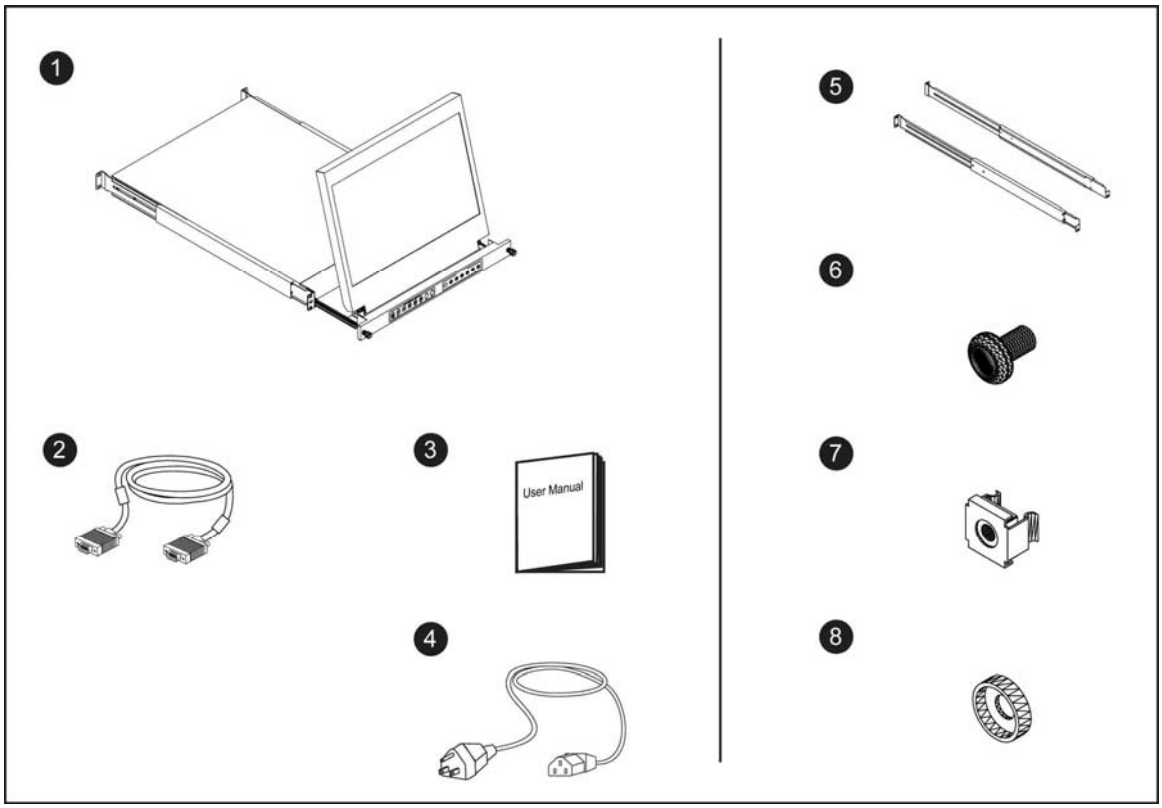
■ Please refer to P.27 - 39

Caution: The Rackmount LCD Drawer & Display are hot-pluggable, but components of connected devices, such as the servers and KVM switch, may not be hot-pluggable. Plugging and unplugging cables while servers and KVM are powered on may cause irreversible damage to the servers, KVM and Rackmount LCD Drawer. Before attempting to connect anything to the Rackmount LCD Drawer, we suggest turning off the power to all devices before connecting them. Apply power to connected devices again only after the Rackmount LCD Drawer is receiving power. The company is not responsible for damage caused in this way.

3.1 Package Contents

Chapter 3

NQW119



1 LCD drawer x 1 pc

2 6' VGA cable (male to male) x 1pc

3 User manual x 1 pc

4 Power cord x 1 pc

5 Mounting bracket x 2 pcs

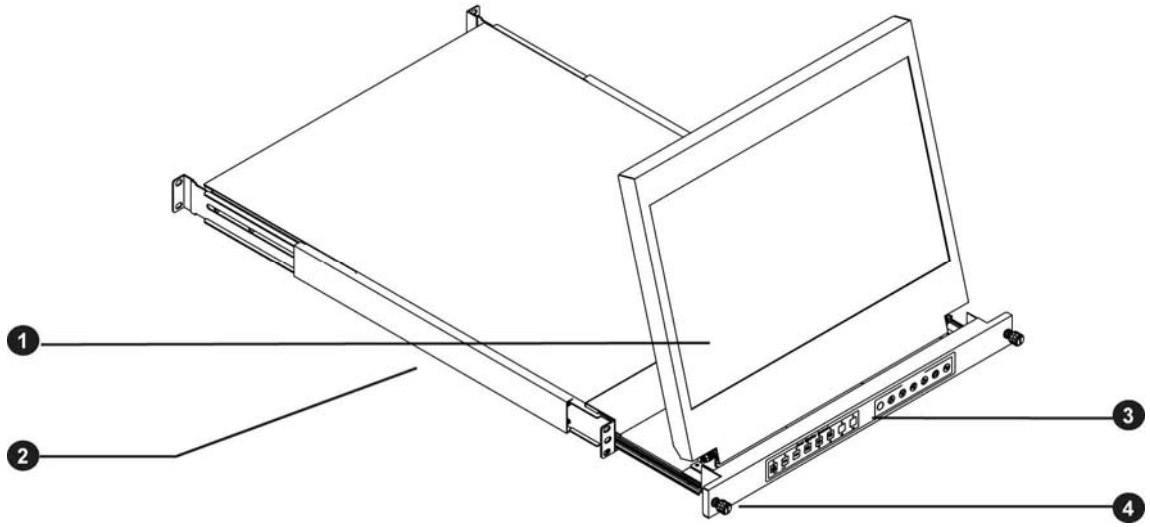
6 M6*15mm screw x 8 pcs

7 M6 cage nut x 8 pcs

8 Cup washer x 8 pcs

3.2 Structure Diagram

NQW119



1 LCD interchangeable module kit

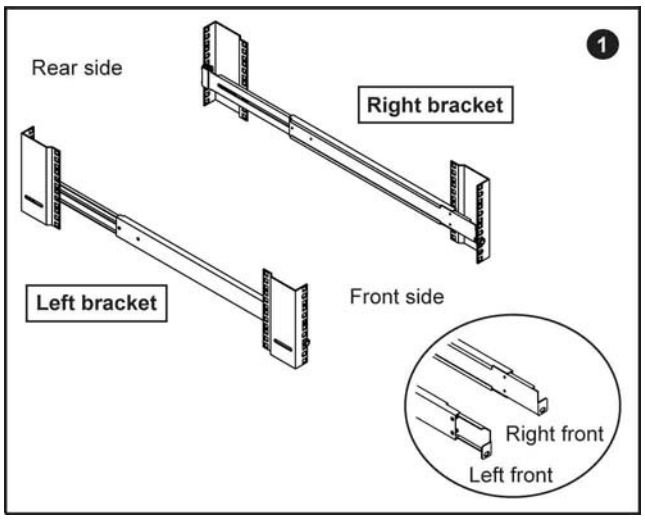
2 "One Man" Installation Slides

3 LCD + Quad display membrane

4 Thumb Screw

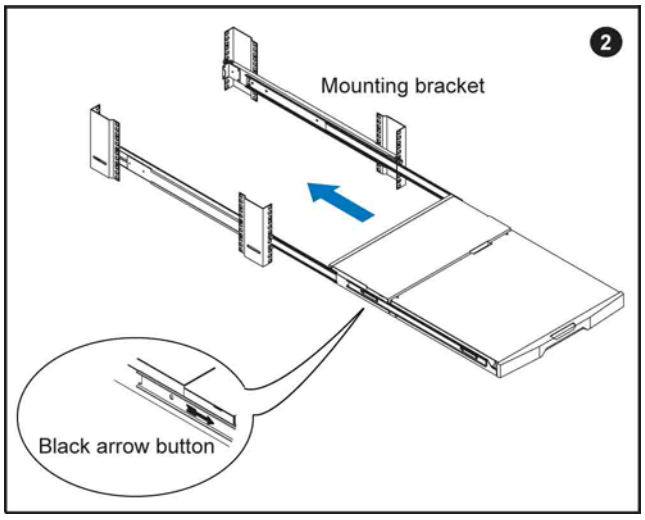
3.3 How to Install "One Man" Installation Slides

Install into rack



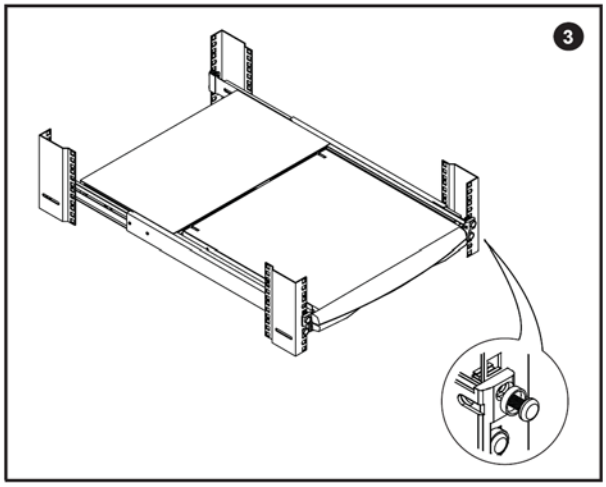
- Attach the left and right mounting bracket to rack 19" mounting rails.
- Adjust the rear mouting bracket to fit your rack.
- M6 screw and cup washer x 6 pcs included.

Caution: Leaving the screws slightly loose, until you complete the installation in step 4

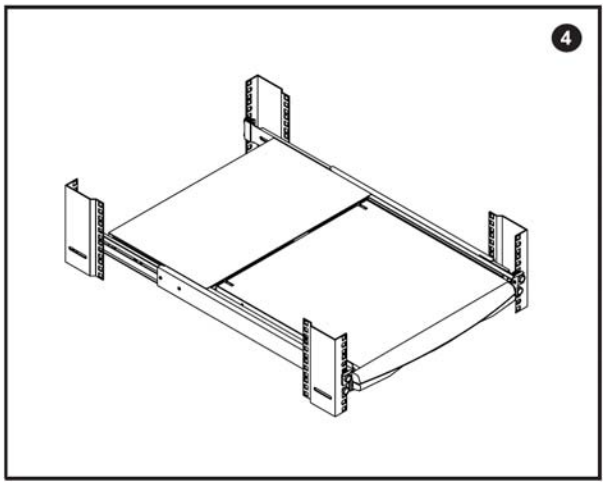


- Pick up the LCD keyboard drawer.
- Insert the LCD keyboard drawer into the mounting bracket.
- Pull and hold the left & right black arrow buttons on the rails.
- Return the LCD keyboard drawer to park position.

3.3 How to Install "One Man" Installation Slides



- Attach front left and right mounting ears of the LCD keyboard drawer to vertical mounting rails.
- M6 screw and cup washer x 2 pcs included.



Complete the installation

- Tighten all 8 pcs of M6 screw to complete the installation.

3.4 How to Use the Slides

NQW119

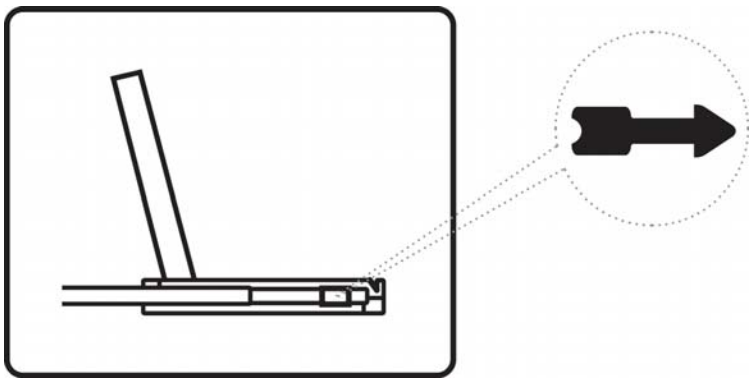


Figure 7

■ A black arrow release button is located on the outside of each slide. (shown in **Figure 7**).

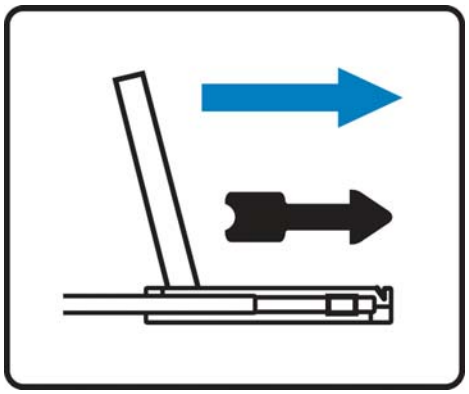


Figure 8

■ Pull and hold the black arrow button on either side of the LCD keyboard drawer to unlock. (shown in **Figure 10**).

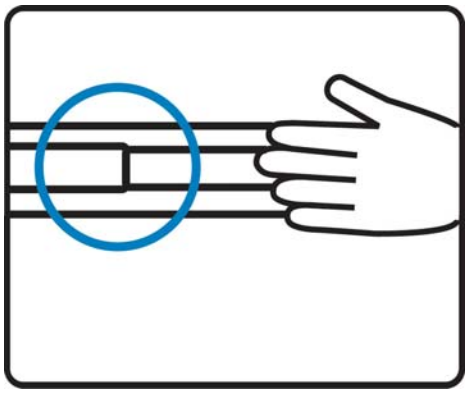


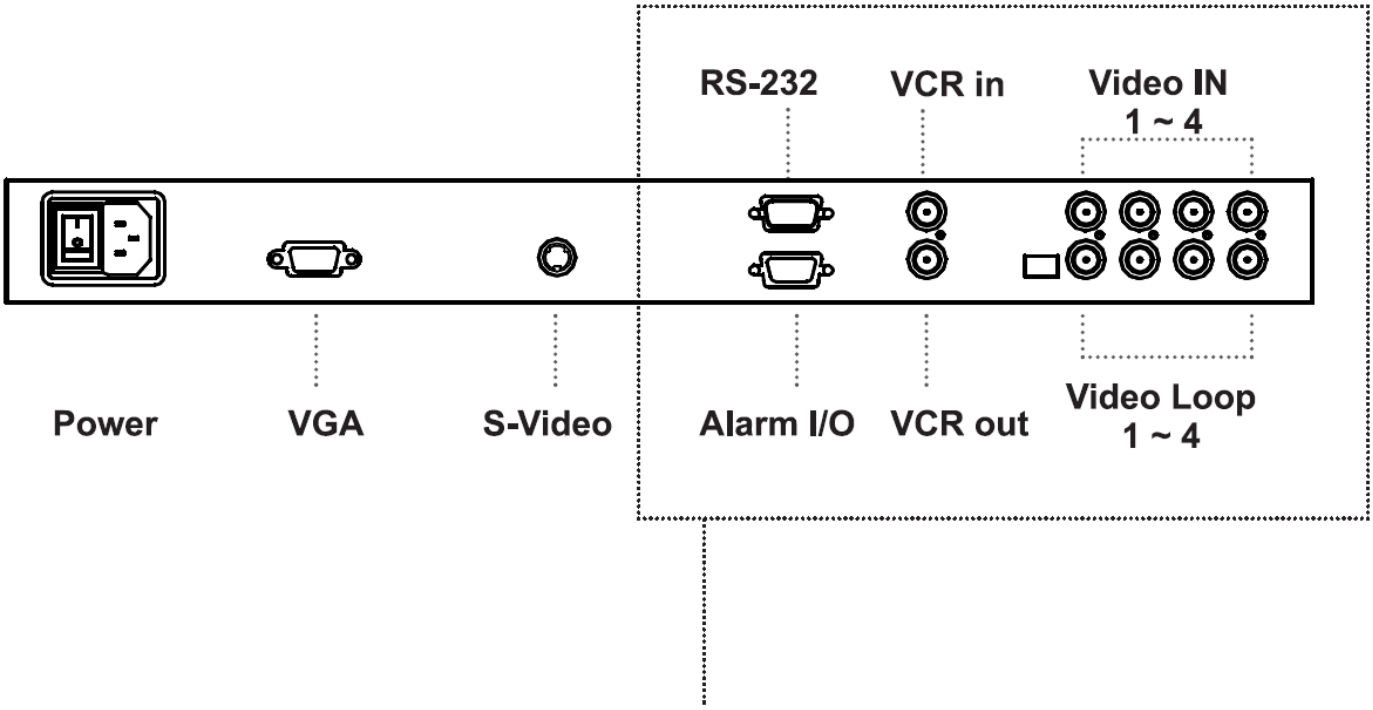
Figure 9

■ Push the LCD keyboard drawer into the rack. (shown in **Figure 9**).

Caution : Keep your fingers away from the slide top

3.4 Connection

NQW119



■ Please refer to P.28 - 40

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4.1 Specifications

Chapter 4

NQW922, NQW819 & NQW119

Item	Description	
Diagonal Size	19" TFT	22" TFT
Max. Resolution	1440 x 990	1680 x 1050
Brightness (cd/m²)	300	300
Color Support	16.7 M	16.7 M
Contrast Ratio (typ.)	1000:1	1000:1
Viewing Angle (H/V)	160˚ x 160˚	170˚ x 160˚
Display Area (mm)	408 x 255	474 x 296
Tr Response Time (ms)	1.3	3.6
LCD Panel MTBF (hrs)	50,000	50,000
VGA Signal Input	Analog RGB, 0.7Vp-p	
Sync. Type	Separate H/V, Composite, SOG	
Resolution	720 x 400, 70 Hz	
	640 x 480, 60 / 70 / 72 / 75 Hz	
	800 x 600, 60 / 70 / 72 / 75 Hz	
	1024 x 768, 60 / 70 / 75 Hz	
	1152 x 864, 60 / 70 / 75 Hz	
	1280 x 720, 60 / 70 / 75 Hz	1280 x 720, 60 / 75 Hz
	1280 x 1024, 60 / 70 / 75 Hz	1280 x 1024, 60 / 75 Hz
	1440 x 900, 60 Hz	1680 x 1050, 60 Hz
Plug & Play DDC	EDID 1.3	
Power Input	Auto-sensing 100 to 240VAC, 50 / 60Hz	
Power Consumption	Max. 48 Watt, Standby 5 Watt	
Compatibility	Multi-platform - Mix PCs, SUNs, IBMs, HPs & DELLs.	
Options		
DC Power	DC power input with 12V, 24V, 48V selection	
Environmental		
Operation	0˚ to 50˚C Degree	
Storage	-5˚ to 60˚C Degree	
Relative Humidity	5~90%, non-condensing	
Shock	10G acceleration (11ms duration)	
Vibration	5~500Hz 1G RMS random vibration	

5.1 Dimensions

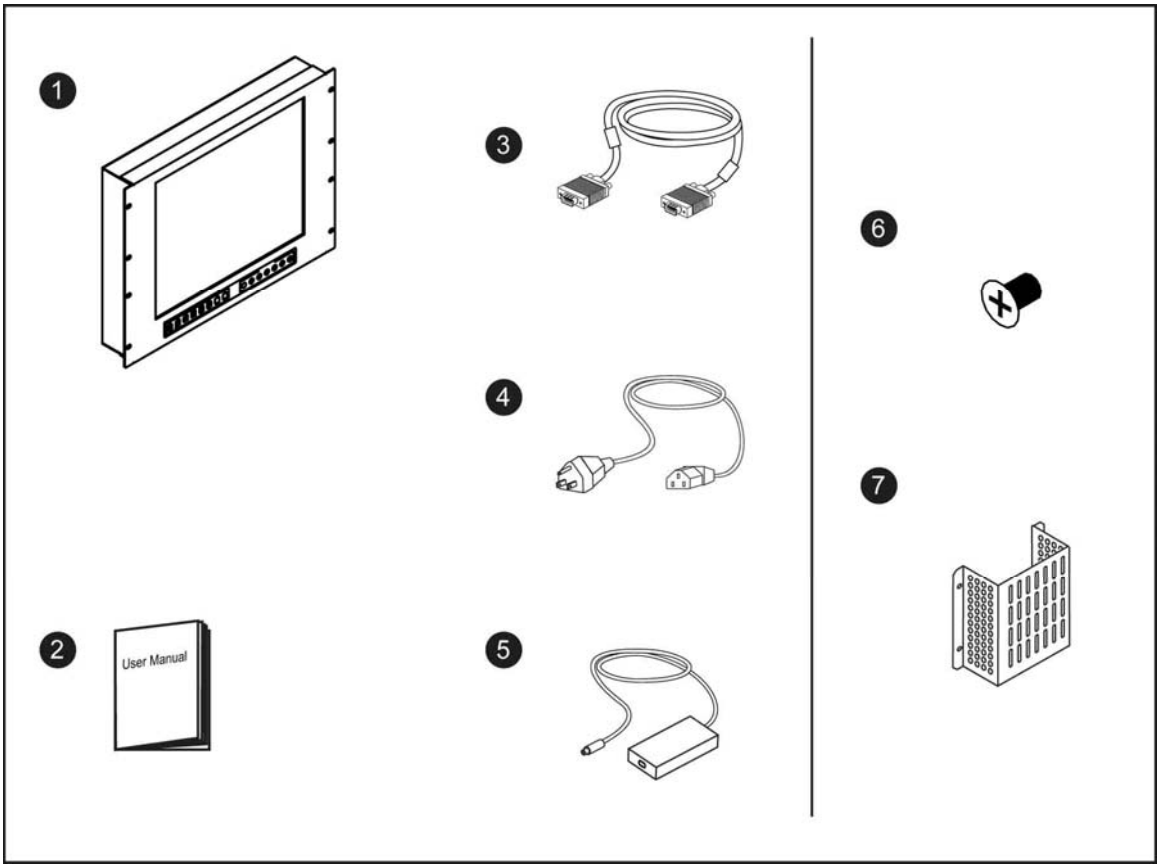
NQW922, NQW819 & NQW119

Model	Product Dimension (W x D)		Packing Dimension (W x D x H)	Net Weight	Gross Weight
NQW922	500.4 x 70.5mm 19.7 x 2.8"	9U	565 x 539 x 156 mm 22.2 x 21.2 x 6.1"	12 kg 26 lb	15 kg 33 lb
NQW819	480 x 71.5mm 18.9 x 2.8"	8U	565 x 495 x 156 mm 22.2 x 19.5 x 6.1"	8 kg 18 lb	10 kg 22 lb
NQW119	445 x 650 x 44 mm 17.5 x 25.6 x 1.73 "		581 x 755 x 172 mm 22.9 x 29.7 x 6.8"	13 kg 29 lb	18 kg 40 lb

6.1 Package Contents

Chapter 6

NPQ817, NPQ919 & RP-W1020QD



1 Rackmount LCD display x 1 pc

2 User manual x 1 pc

3 6' VGA cable (male to male) x 1pc

4 Power cord x 1pc

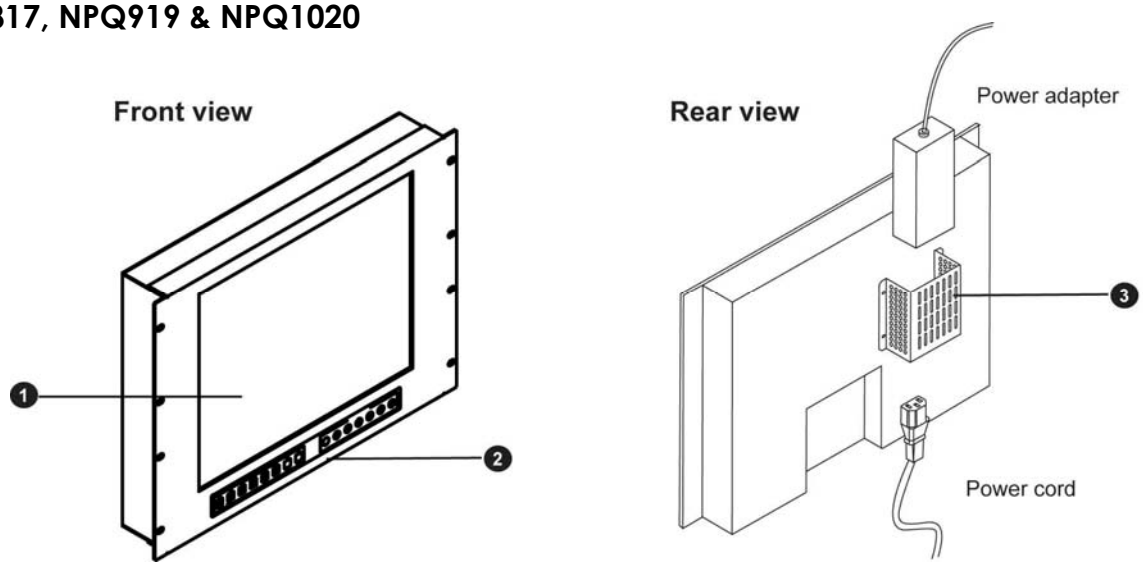
5 Auto switch power adapter x 1pc

6 M3.2*4.5mm screw x 4 pcs

7 Power adapter bracket x 1 pc

6.2 Structure Diagram

NPQ817, NPQ919 & NPQ1020

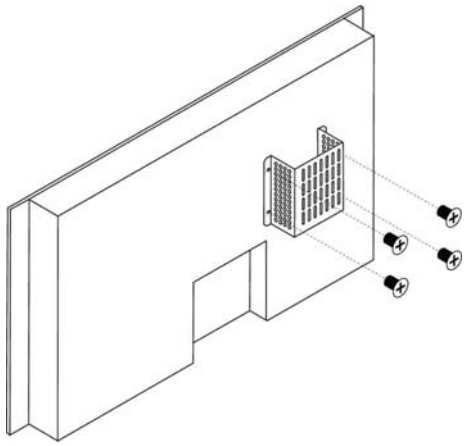


1 LCD interchangeable module kit

2 2-in-1 LCD + Quad display membrane

3 Power adapter bracket

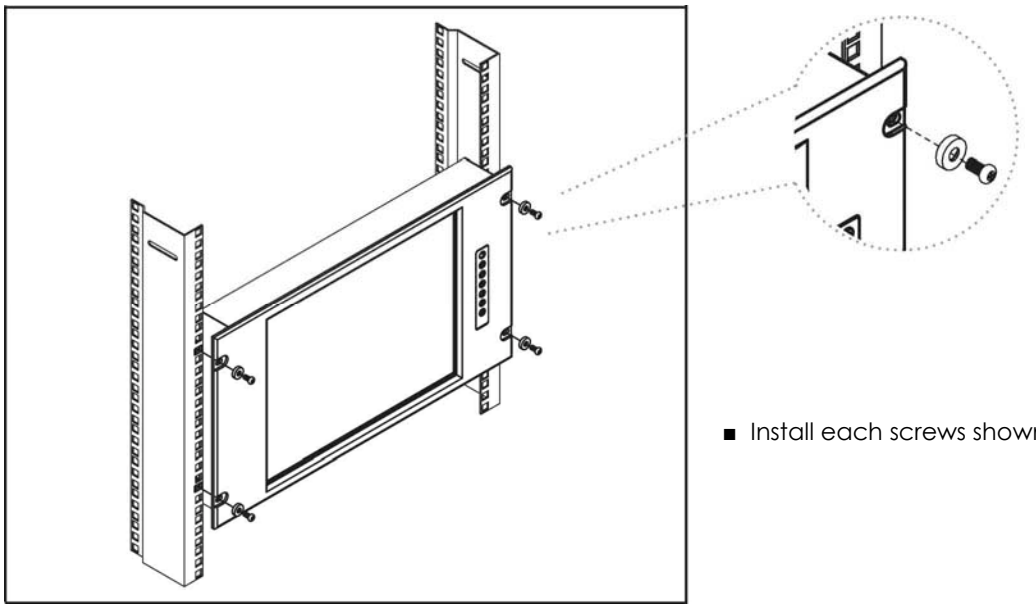
Power adapter bracket installation



M3.2*4.5mm screw x 4 pcs

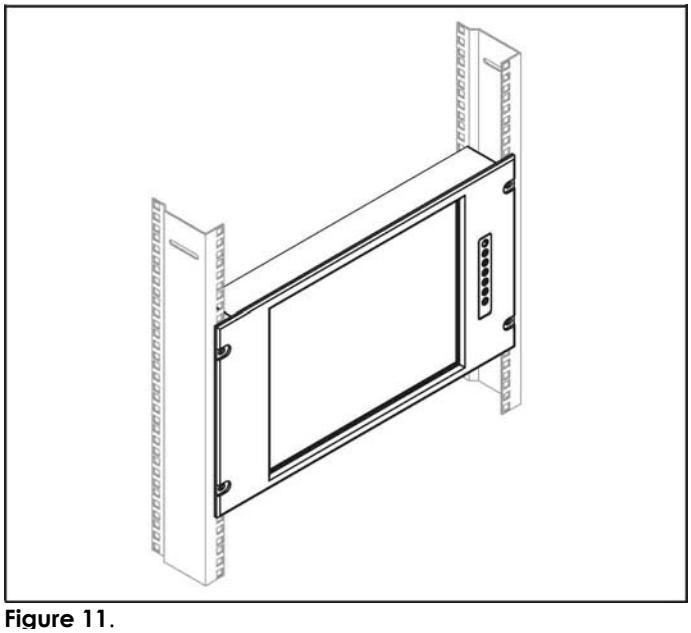
6.3 Installation

NPQ817, NPQ919 & NPQ1020



- Install each screws shown in **Figure 10**.

Figure 10.



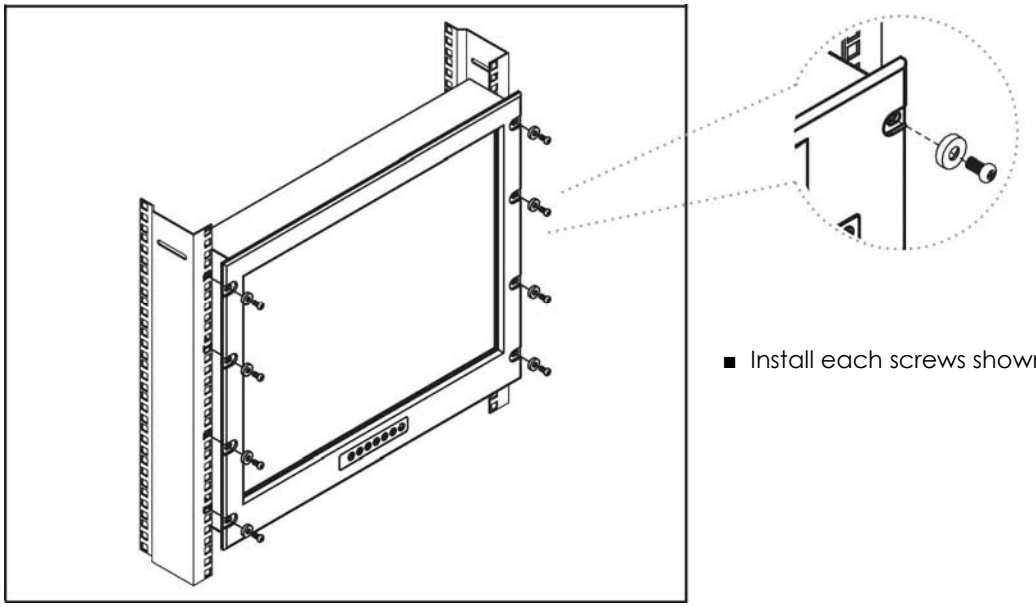
- Fixed the LCD into the rack.

*** M6 screws are not provided.**

Figure 11.

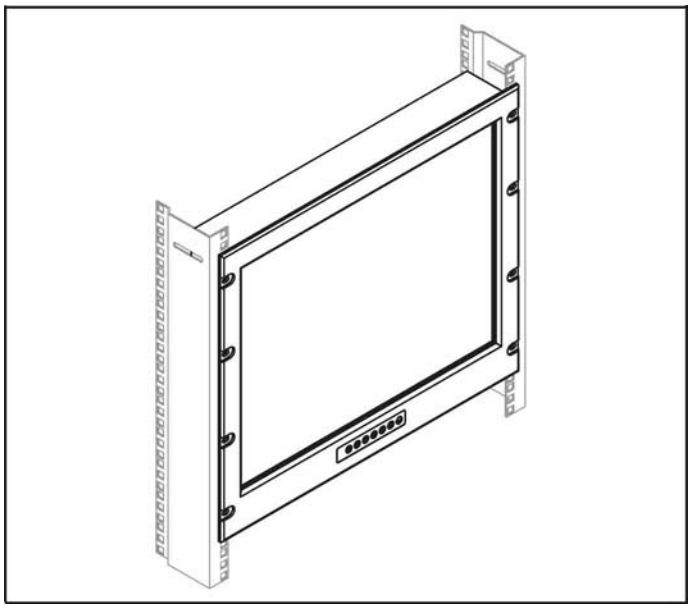
6.3 Installation

NP920 & SNP920



- Install each screws shown in **Figure 12**.

Figure 12.



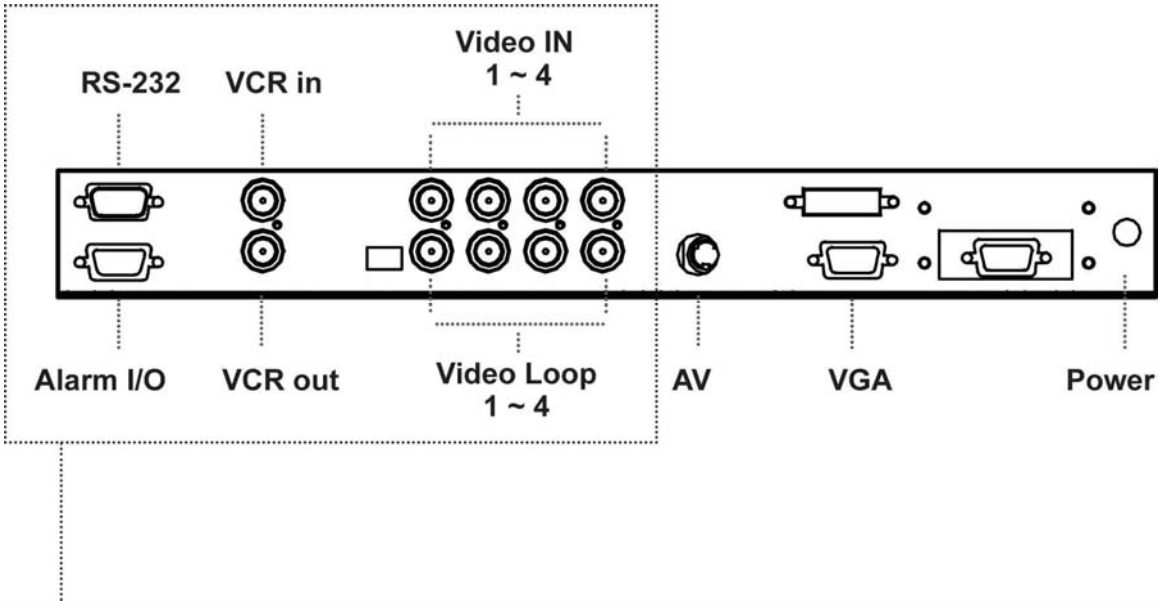
- Fixed the LCD into the rack.

  *** M6 screws are not provided.**

Figure 13.

6.4 Connection

NPQ817, NPQ919 & NPQ1020



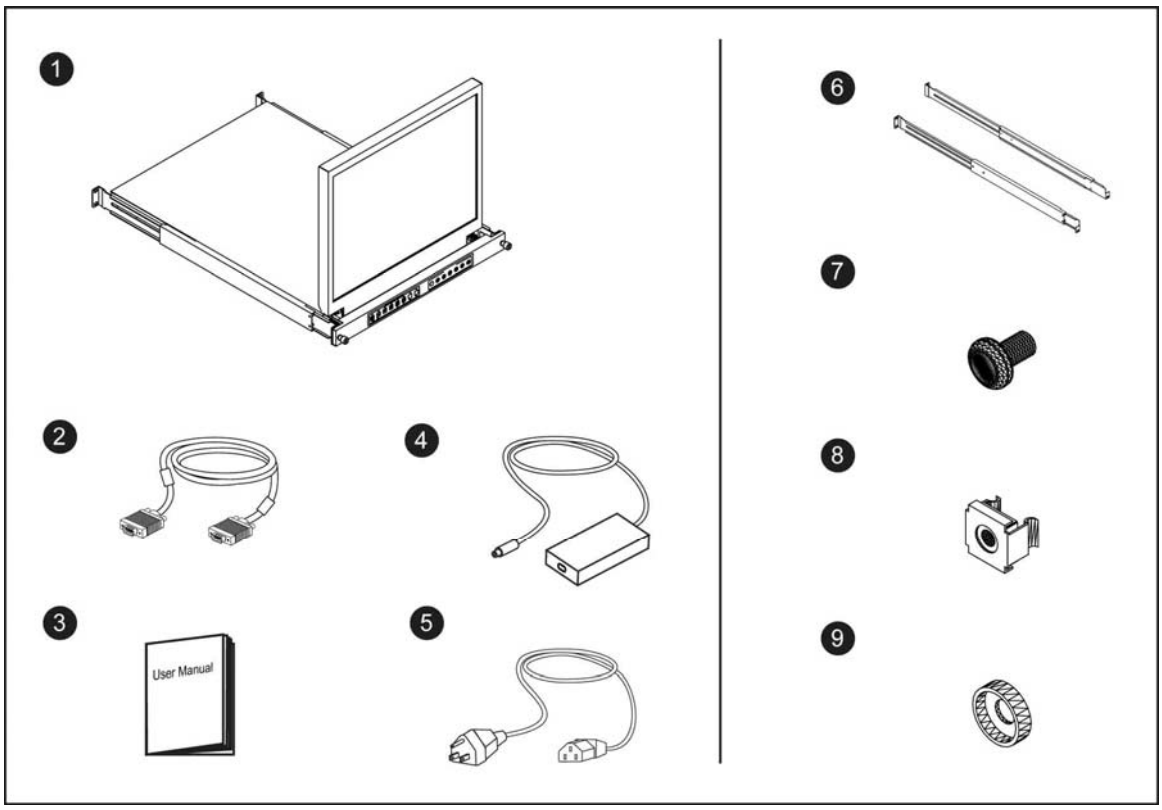
■ Please refer to P.28 - 40

Caution: The Rackmount LCD Drawer & Display are hot-pluggable, but components of connected devices, such as the servers and KVM switch, may not be hot-pluggable. Plugging and unplugging cables while servers and KVM are powered on may cause irreversible damage to the servers, KVM and Rackmount LCD Drawer. Before attempting to connect anything to the Rackmount LCD Drawer, we suggest turning off the power to all devices before connecting them. Apply power to connected devices again only after the Rackmount LCD Drawer is receiving power. The company is not responsible for damage caused in this way.

7.1 Package Contents

Chapter 7

NPQ117, NPQ119 & NPQ120



1 LCD drawer x 1 pc

2 6' VGA cable (male to male) x 1pc

3 User manual x 1 pc

4 Auto switch power adapter (for external power version) x 1pc

5 Power cord x 1pc

6 Mounting bracket x 2 pcs

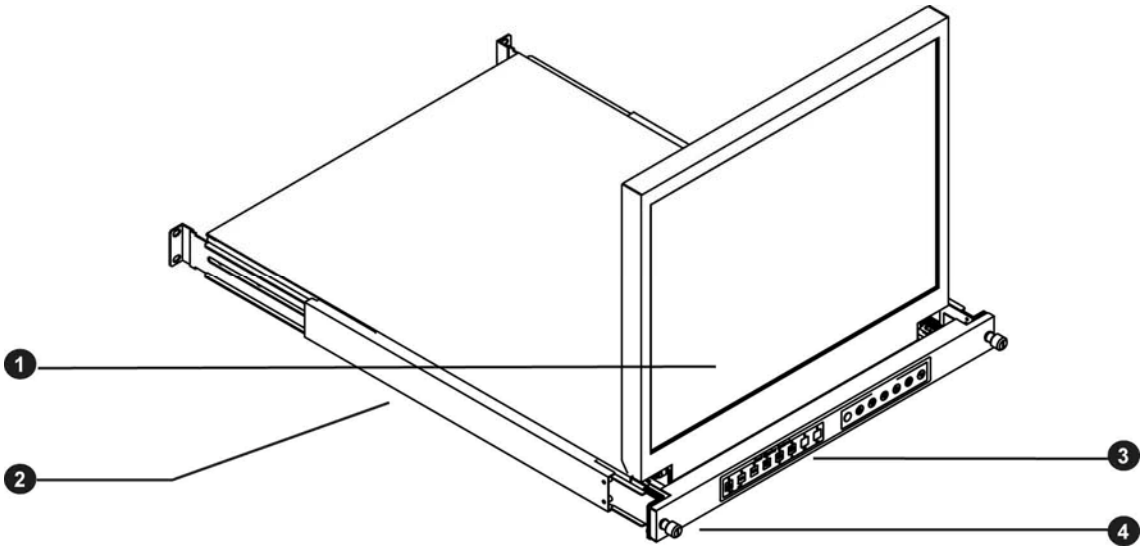
7 M6*15mm screw x 8 pcs

8 M6 cage nut x 8 pcs

9 Cup washer x 8 pcs

7.2 Structure Diagram

NPQ117, NPQ119 & NPQ120



1 LCD interchangeable module kit

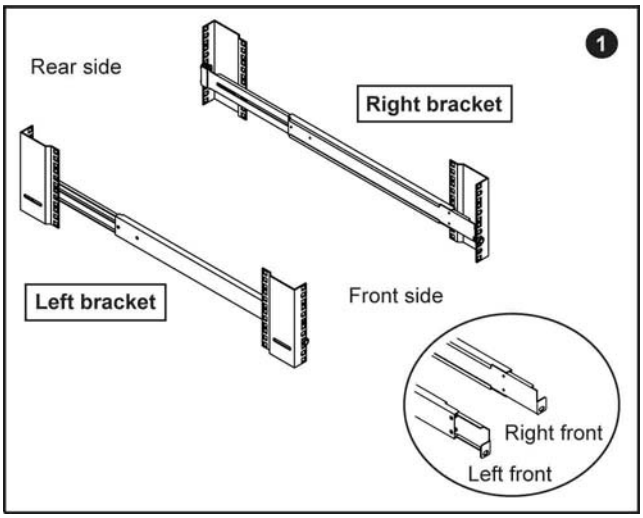
2 "One Man" Installation Slides

3 LCD + Quad display membrane

4 Thumb Screw

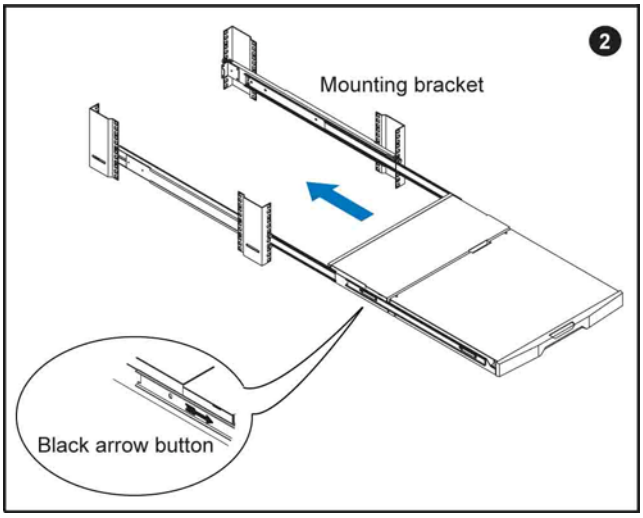
7.3 How to Install "One Man" Installation Slides

Install into rack



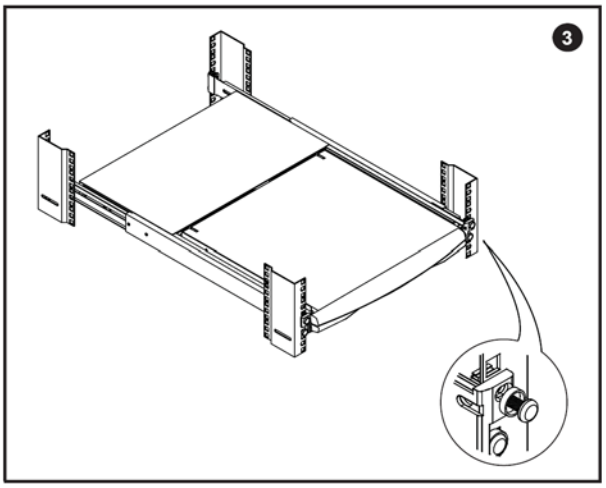
- Attach the left and right mounting bracket to rack 19" mounting rails.
- Adjust the rear mouting bracket to fit your rack.
- M6 screw and cup washer x 6 pcs included.

Caution: Leaving the screws slightly loose, until you complete the installation in step 4

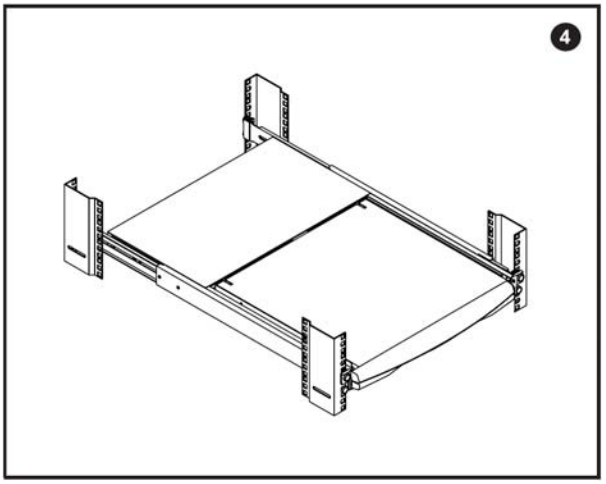


- Pick up the LCD keyboard drawer.
- Insert the LCD keyboard drawer into the mounting bracket.
- Pull and hold the left & right black arrow buttons on the rails.
- Return the LCD keyboard drawer to park position.

7.3 How to Install "One Man" Installation Slides



- Attach front left and right mounting ears of the LCD keyboard drawer to vertical mounting rails.
- M6 screw and cup washer x 2 pcs included.



Complete the installation

- Tighten all 8 pcs of M6 screw to complete the installation.

7.4 How to Use the Slides

NPQ117, NPQ119 & NPQ120

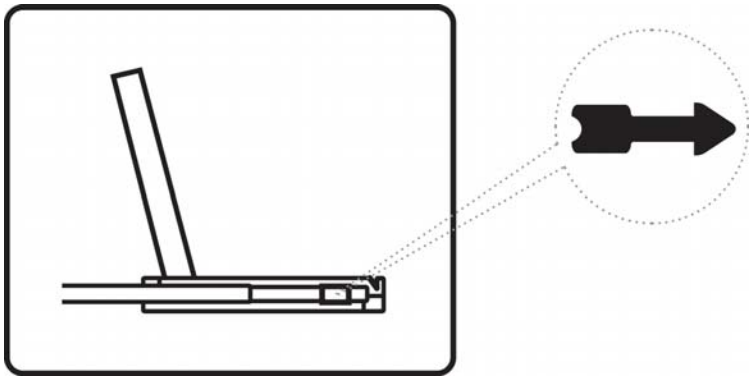


Figure 12

■ A black arrow release button is located on the outside of each slide. (shown in **Figure 12**).

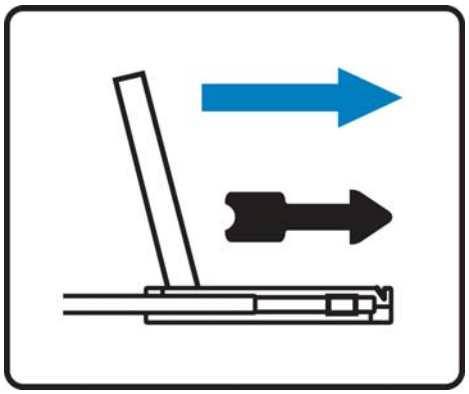


Figure 13

■ Pull and hold the black arrow button on either side of the LCD keyboard drawer to unlock. (shown in **Figure 13**).

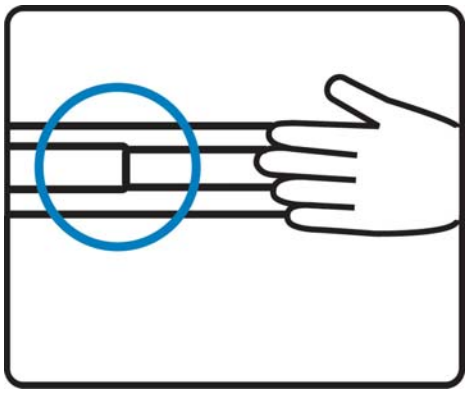


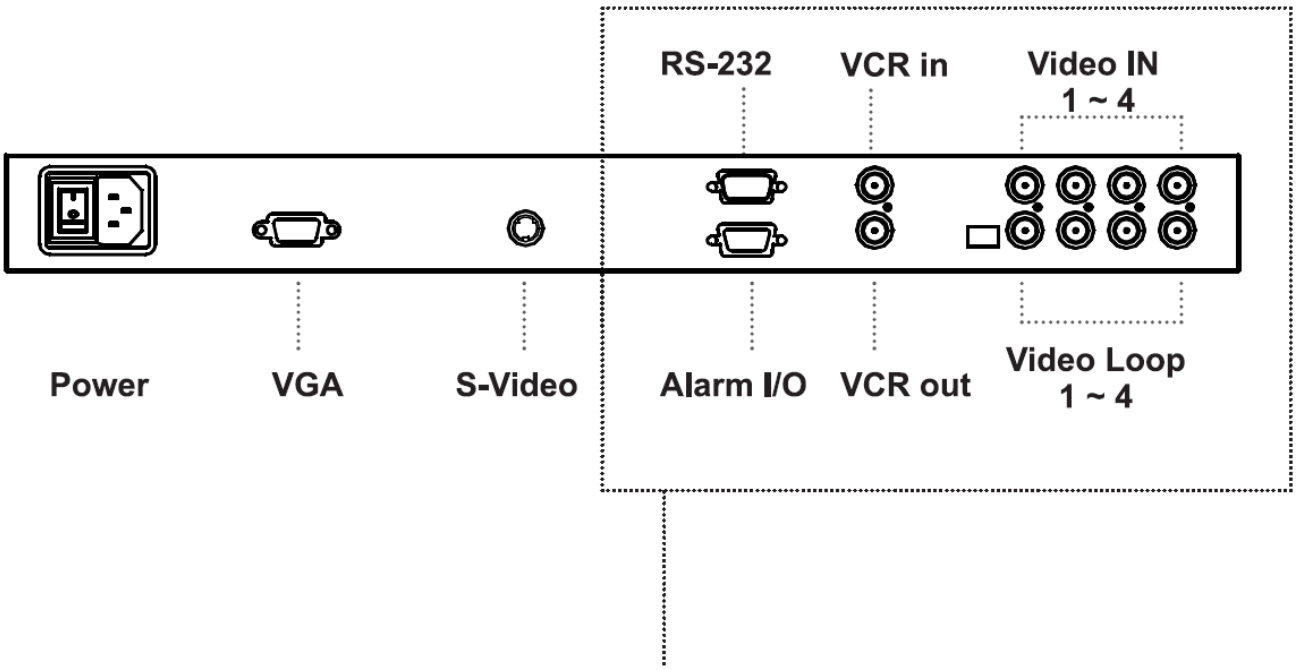
Figure 14

■ Push the LCD keyboard drawer into the rack. (shown in **Figure 14**).

Caution : Keep your fingers away from the slide top

7.5 Connection

NPQ117, NPQ119 & NPQ120



■ Please refer to P.28 - 40

Caution: The Rackmount LCD Drawer & Display are hot-pluggable, but components of connected devices, such as the servers and KVM switch, may not be hot-pluggable. Plugging and unplugging cables while servers and KVM are powered on may cause irreversible damage to the servers, KVM and Rackmount LCD Drawer. Before attempting to connect anything to the Rackmount LCD Drawer, we suggest turning off the power to all devices before connecting them. Apply power to connected devices again only after the Rackmount LCD Drawer is receiving power. The company is not responsible for damage caused in this way.

8.1 Specifications

Chapter 8

NPQ817, NPQ919, NPQ1020, NPQ117, NPQ119 & NPQ120

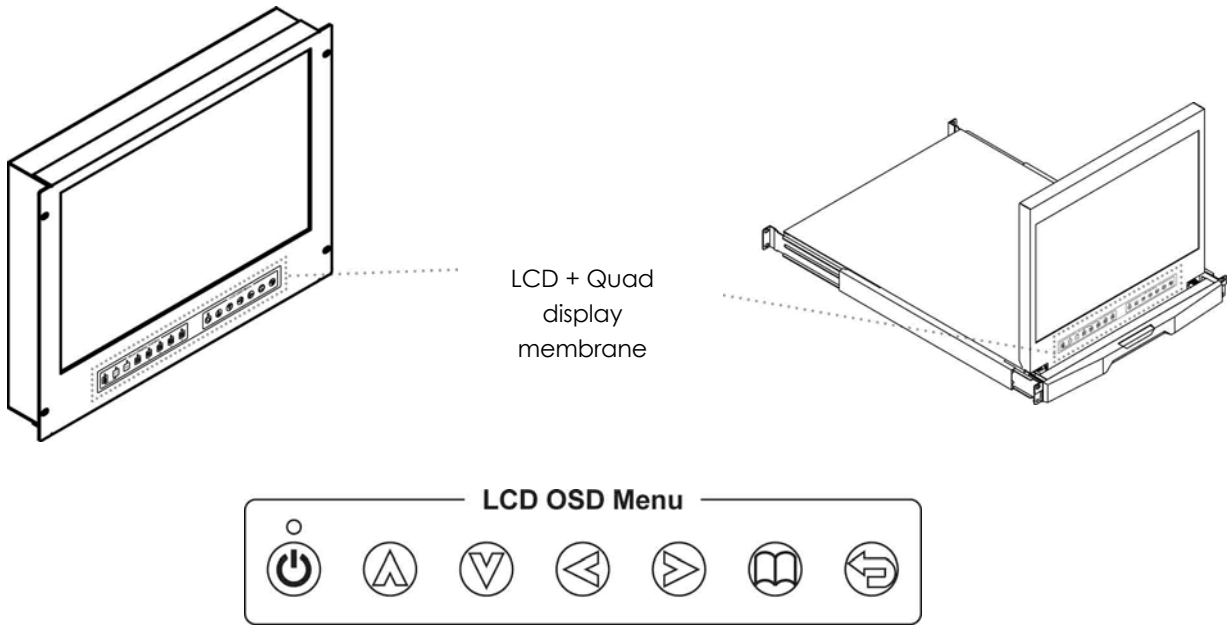
Item	Description		
LCD Manufacturer	SAMSUNG		
Diagonal Size	17" TFT	19" TFT	20" TFT
Max. Resolution	1280 x 1024	1280 x 1024	1600 x 1200
Brightness (cd/m²)	300	300	300
Color Support	16.7 M	16.7 M	16.7 M
Contrast Ratio (typ.)	1000:1	1000:1	800:1
Viewing Angle (H/V)	160˚ x 160˚	160˚ x 160˚	160˚ x 160˚
Display Area (mm)	338 x 270	376 x 301	408 x 306
Tr Response Time (ms)	1.3	1.3	1
LCD Panel MTBF (hrs)	50,000	50,000	50,000
VGA Signal Input	Analog RGB, 0.7Vp-p		
Sync. Type	Separate H/V, Composite, SOG		
Resolution	720 x 400, 70 Hz		
	640 x 480, 60 / 70 / 72 / 75 Hz		640 x 480, 60 / 70 / 72 / 75 Hz
	800 x 600, 60 / 70 / 72 / 75 Hz		
	1024 x 768, 60 / 70 / 75 Hz		
	1152 x 864, 60 / 70 / 75 Hz		
	1280 x 720, 60 / 70 / 75 Hz		1280 x 720, 60 / 75 Hz
	1280 x 1024, 60 / 70 / 72 / 75 Hz		1280 x 1024, 60 / 70 / 75 Hz
	-		1400 x 1050, 60 Hz
	-		1600 x 1200, 60 Hz
Plug & Play DDC	EDID 1.3		
Power Input	Auto-sensing 100 to 240VAC, 50 / 60Hz		
Power Consumption	Max. 48 Watt, Standby 5 Watt		
Compatibility	Multi-platform - Mix PCs, SUNs, IBMs, HPs & DELLs.		
Regulation Approval	FCC, CE		
Options			
DC Power	DC power input with 12V, 24V, 48V selection		
Environmental			
Operation	0˚ to 50˚C Degree		
Storage	-5˚ to 60˚C Degree		
Relative Humidity	5~90%, non-condensing		
Shock	10G acceleration (11ms duration)		
Vibration	5~500Hz 1G RMS random vibration		

9.1 Dimensions

NPQ817, NPQ919, NPQ1020, NPQ117, NPQ119 & NPQ120

Model	Product Dimension (W x D)		Packing Dimension (W x D x H)	Net Weight	Gross Weight
NPQ817 series	480 x 71.5 mm 18.9 x 2.8"	8U	565 x 450 x 156 mm 22.2 x 17.7 x 6.1"	7 kg 15 lb	8.5 kg 19 lb
NPQ919 series	480 x 71.5 mm 18.9 x 2.8"	9U	565 x 495 x 156 mm 22.2 x 19.5 x 6.1"	8 kg 18 lb	10 kg 22 lb
NPQ1020 series	480 x 71.5 mm 18.9 x 2.8"	10U	565 x 539 x 156 mm 22.2 x 21.2 x 6.1"	12 kg 26 lb	15 kg 33 lb
NPQ117 series	442 x 600 x 44 mm 17.4 x 23.6 x 1.73"		581 x 755 x 172 mm 22.9 x 29.7 x 6.8"	12 kg 26 lb	17 kg 37 lb
NPQ119 series	442 x 600 x 44 mm 17.4 x 23.6 x 1.73"		581 x 755 x 172 mm 22.9 x 29.7 x 6.8"	13 kg 29 lb	18 kg 40 lb
NPQ120 series	442 x 650 x 44 mm 17.4 x 25.6 x 1.73"		589 x 856 x 168 mm 23.2 x 33.7 x 6.8"	14 kg 31 lb	19 kg 42 lb

10.1 On Screen Display Operation



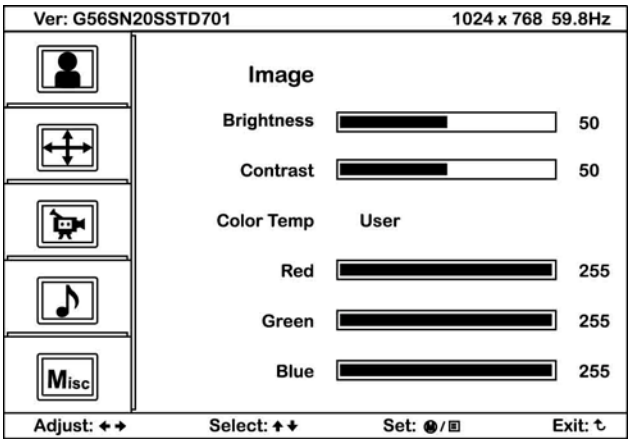
For LCD OSD Menu

Membrane Switch	Function
○ ● ●	Power light Green = On Orange = Power saving
⏻	Power on / off LCD
🕮	Display the OSD menu
△▽◁▷	Scrolls through menu options and adjusts the displayed control (To auto adjustment by pressing the button △ for 5 seconds)
⮌	Exit the OSD screen Toggle analog, digital & video connection (DVI-D and video options only)

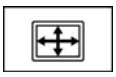
For Quad Display Control

Remarks:

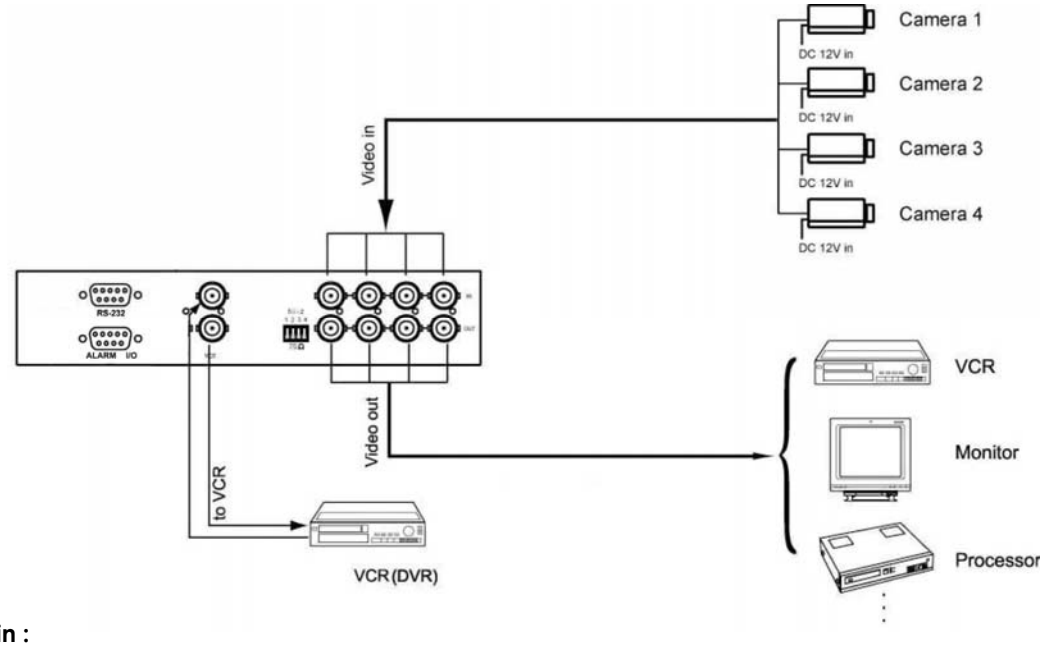
- Quad Display Control please refer to P.28 - 40



OSD Configuration Page

	Image: To enter into the brightness, contrast, colour temp, red, green, and blue
	**Geometry:** To enter into the auto adjust, H position, V position, phase and clock
	Video: To enter into the colour, tint, sharpness, noise reduction, DCDi and TV Setup
	Audio: To enter into volume, bass, treble, balance, AVL and mute
	Misc: To enter into the language, OSD position, graphic mode, OSD time, ratio, reset

11.1 Basic System Connection



1. VCR in :
This BNC connector is connected to video output from VCR/DVR. A pre-recorded quad screen signal from a tape can be played back through a VCR/DVR and displayed on the video output channels. Push the VCR button (#2) to switch the device to VCR Playback mode.

2. VCR out :
This BNC connector is to be connected to the Video in from your VCR/DVR. It will only provide a quad screen video to ensure an un-interrupted video recording for all four cameras. The display video is not affected by the control panel.

3. Terminations :
These impedance switches are used to provide proper termination for each camera input. These switches toggle between 75Ω and Hi-Z impedance. Incorrect termination will degrade the quality of the video signal. All video inputs not "looped through" to another device, the corresponding switches need to be set to 75Ω termination position. If another device is connected to video out loop through connector set the corresponding termination switch to Hi-Z position. Any device connected to the video out loop through connectors needs to be configure to 75Ω video termination. The factory default termination setting is 75Ω.

4. Ch1 In, Ch2 In, Ch3 In, and Ch4 In Video IN connectors :
These BNC connectors are used to connect to the video out from camera. Four cameras can be connected to these connectors to form a quad screen in the following mapping order.

1	2
3	4

5. Ch1 Out, Ch2 Out, Ch3 Out, and Ch4 Out Video Loop through connectors :
These connectors are used to loop video signals from each camera out to other devices.

11.2 Alarm I/O Connection Operation

1. ALARM I/O :

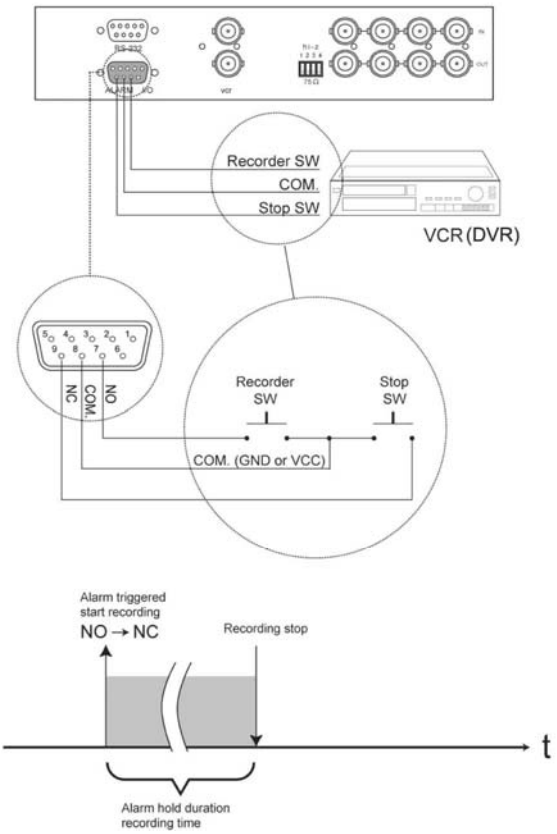
This female type 9 pin D-sub connector is used for alarm sensor input and alarm output control connections. It provides
Normal Open and Normal Close contacts for alarm out control.

Pin Assignment for Alarm Connector (female type)					
PIN#		PIN#		PIN#	
1	Sensor 1	4	Sensor 4	7	Normal Open Contact
2	Sensor 2	5	Reset In	8	Common Contact
3	Sensor 3	6	GND	9	Normal Close Contact

The Alarm Hold Time can be configured from 0 second to 99 minutes for FIO-8037 / FIO-8134 through system Setup menu.

2. VCR Connection for Tape Recording Start and Stop Control :

Connecting the contacts of VCR RECORD and STOP switch to the alarm output NC and NO contacts will allow you to use
an ordinary VCR to record for longer period of time. Combined with alarm sensor detection, the VCR will record only when
an alarm sensor is activated.



*. If more than one sensor have been trigged, VCR will start to record after the last trigged event.

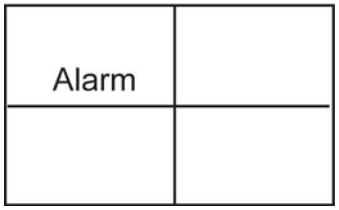
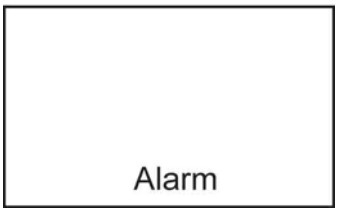
*. In order to make use of the alarm called full screen display function, the VIDEO IN connector from the VCR has to be connected to LIVE monitor connector of the device. If more than one sensor are trigged, VCR will then record all the events in full screen mode accordingly.

11.2 ALARM I/O Connection & Operation

3 Sensor Activated Alarm

The unit is equipped with 4 alarm sensor inputs. If any alarm is activated:

- the built-in buzzer will be activated.
- the quad will switch the corresponding channel indicator LED to blinking mode.
- a warning message depending on different models will be displayed as follows:

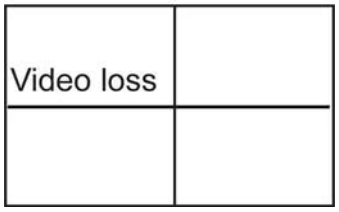
Quad output channel (#4)	LIVE output channel (#5)
	
Blinking Alarm & Title message on the activated channel in quad screen	Full screen display of the activated channel. Also display a blinking Alarm message

Above mentioned alarm can be cleared by: If the device is operated under Security Lock ON mode, Push Lock button for 2 seconds to disable the function then push any button in the front panel.

4 Video Loss Alarm

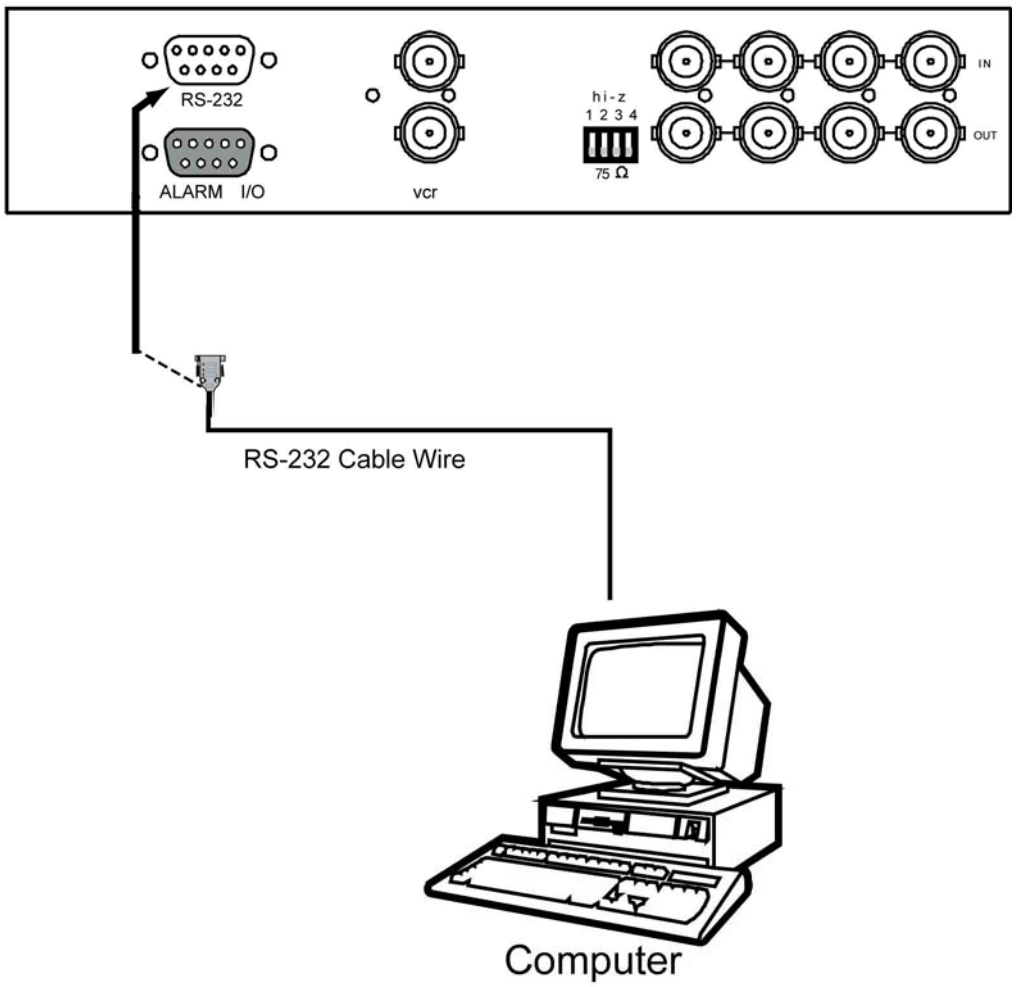
Loss of video at any input is automatically detected by the device. The device will:

- Activate the built-in buzzer.
- Switch the corresponding channel indicator LED to blinking mode.
- Display warning message on quad screen:

Quad output channel (#4)

Blinking Video Loss & Title message on the activated channel in quad screen

- The warning message and the buzzer can be cleared by pushing Lock button (#2) for more than 4 seconds if the device is operated under Security lock On mode, or pushing any button on the front panel if the device is operated under Security lock OFF mode.

11.3 Remote Control Connection

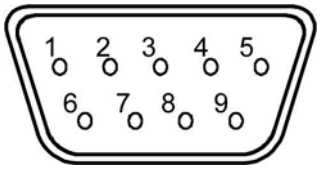


11.3 Remote Control Connection & Operation Chapter 11

The device may be controlled via the male type 9 pin D-sub/RS-232 connector (#13) from a RC-5002 keypad, terminal or computer using ASCII code.

Note: Please power off the unit before connecting the Remote Control keypad.

1. Pin assignment of the male type 9 pin D-sub connector:



Pin Assignment for Remote Control Connector					
1	GND	4	NC	7	VCC
2	RX	5	NC	8	GND
3	TX	6	VCC	9	GND

When a computer is used to control this device through a RS-232 port, pin 6, 7, 8, and 9 must be disconnected to prevent connecting the VCC and GND signals from the device to the computer. A RS-232 port only uses pin 1, 2, and 3 for control signal transmission.

2. A terminal or computer can be connected to the male type 9 pin D-sub connector on the real panel from it RS-232 port to control this device using standard, uppercase ASCII codes.

2.1 The ASCII command codes for the quad are listed in the table below. The transmission protocol is 1200-baud rate, 8 data bit, 1 start bit, 1 stop bit, and no parity.

Function	ASCII Command Code
Quad Screen Display	E
CH 1	A
CH 2	B
CH 3	C
CH 4	D
Freeze *1	EA, EB, EC, ED
Auto Switching Sequence	F
VCR/Live	G
Key Lock *2	H
Setup Menu *3	GH
Text Select Down *4	(GH) A
Text Select Up	(GH) B
Cursor Left	(GH) C
Cursor Right	(GH) D
Alarm Reset	I

11.3 Remote Control Connection & Operation Chapter 11

*1. For FIO-8037: in order to control the device to operate in Zoom mode, the computer has to first send command code " to switch the signal source from camera to VCR/DVR, at this time the device will automatically zoom channel 1 video from VCR/DVR to full screen. User can then input a corresponding channel code to zoom any other specific channel. Input the corresponding channel code again to put the specific channel to freeze mode and send the code again to clear the freeze mode.

Example: Input GE, (GE) B, (GE) C, and (GE) D for zooming the video signal in channel 1 to 4 from VCR/DVR. Input "A", "B", "C", "D" again to freeze the specific channel. Send command code "G" again to get back to Live input mode.

*2. Computer has to send out command code "H" continuously for 2 seconds to switch the device between security lock ON and OFF mode. If any alarm is activated under security lock ON mode, the device has to send out command code "H" continuously for more than 4 seconds to clear the alarm.

*3. Setup menu is switched ON by sending VCR/DVR and Lock button codes together.

*4. Text Select and Cursor Control functions can be performed only under menu Setup mode.

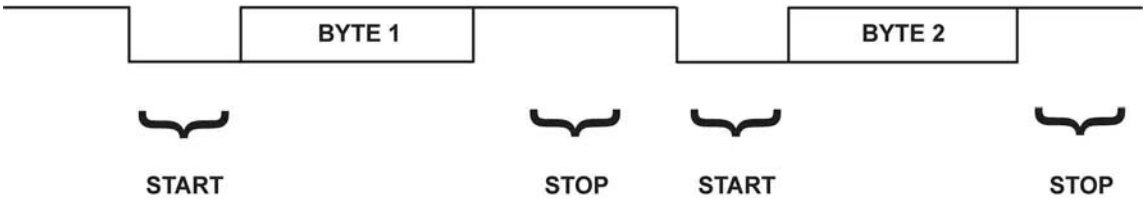
2.2 Right after computer/terminal has sent out the above mentioned control command code to the device, the device will respond with following status code back to computer through RS-232 port:

Status Code	Quad Status	Status Code	Quad Status
EF	Device in Quad mode	DE	CH1 in Sequence mode
EE	CH1 in Freeze mode	DD	CH2 in Sequence mode
ED	CH2 in Freeze mode	DB	CH3 in Sequence mode
EC	CH1 & 2 in Freeze mode	D7	CH4 in Sequence mode
EB	CH3 in Freeze mode	CF	Quad display in Sequence mode
EA	CH1 & 3 in Freeze mode		
E9	CH2 & 3 in Freeze mode	E	CH1 in Full screen mode
E8	CH1, 2, & 3 in Freeze mode	D	CH2 in Full screen mode
E7	CH4 in Freeze mode	B	CH3 in Full screen mode
E6	CH1 & 4 in Freeze mode	7	CH4 in Full screen mode
E5	CH2 & 4 in Freeze mode		
E4	CH1, 2 & 4 in Freeze mode	Attach to above code	
E3	CH3 & 4 in Freeze mode	XX-DF	Buzzer/VCR ON
E2	CH1, 3, & 4 in Freeze mode	XX-7F	Security lock ON
E1	CH2, 3, & 4 in Freeze mode	XX-3F	Buzzer & Security lock ON (Stop)
E0	CH1, 2,3, & 4 in Freeze mode		

11.3 Remote Control Connection & Operation

2.3 The configuration of the status code for both normal and alarm operations:

There are total 2 bytes of the status codes. Byte one, the first 8 bits, shows the current status of the operation modes that the unit is in. Byte two, the second 8 bits, shows the current status of the alarm operations of the unit.



BYTE 1: Status code for normal operation modes

b7	b6	b5	b4	b3	b2	b1	b0
LOCK	VCR	SEQU	QUAD	CH4	CH3	CH2	CH1

Channel Select
1110 = CH1
1101 = CH2
1011 = CH3
0111 = CH4

Display Mode
0 = Quad screen display
1 = Full Screen display

Auto-sequencing mode
0 = Auto sequencing mode
1 = Quad or full screen mode

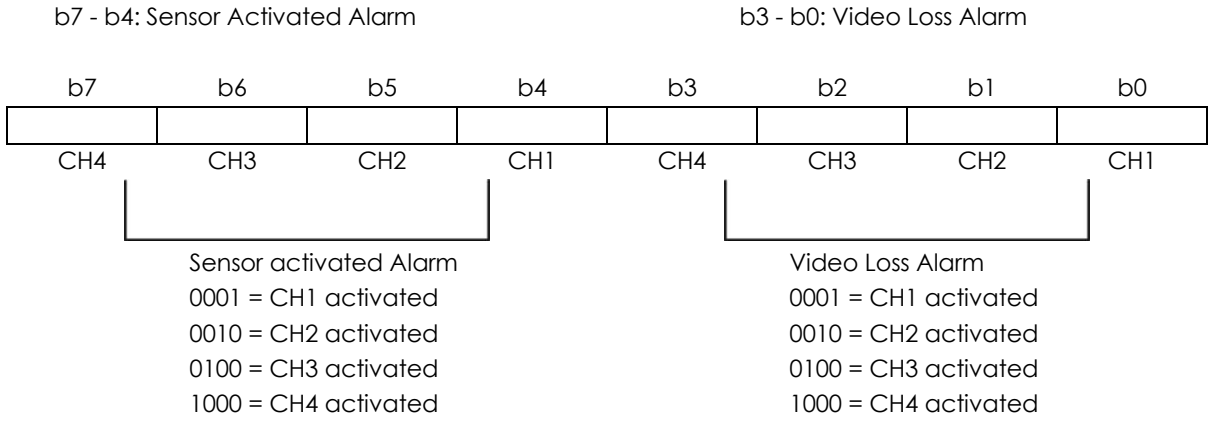
VCR mode
0 = VCR operation
1 = Live operation

Security Lock mode
0 = Security lock ON mode
1 = Security lock OFF mode

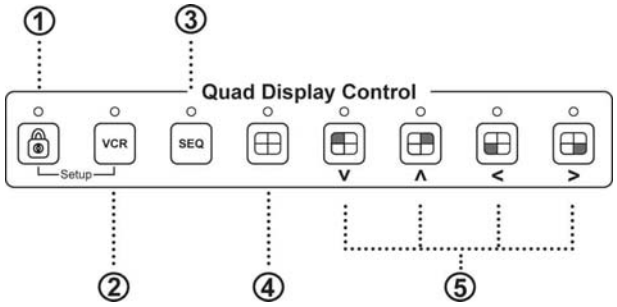
Menu Setup mode
00 = Menu setup mode

11.3 Remote Control Connection & Operation

BYTE 2: Status code for alarm operations: The first 4 bits show the sensor activated alarm status of each channel; next 4 bits show the video loss alarm status of each channel. The digit "1" means alarm event is detected, and "0" means no alarm event is detected.


b7 - b4: Sensor Activated Alarm
b3 - b0: Video Loss Alarm
b7 b6 b5 b4 b3 b2 b1 b0
CH4 CH3 CH2 CH1 CH4 CH3 CH2 CH1
Sensor activated Alarm
0001 = CH1 activated
0010 = CH2 activated
0100 = CH3 activated
1000 = CH4 activated
Video Loss Alarm
0001 = CH1 activated
0010 = CH2 activated
0100 = CH3 activated
1000 = CH4 activated

11.4 Quad Display Operation



1 Lock: Security locks out button. Push this button for 2 seconds to enable control panel lock out function. Push this button again for 2 seconds to disable the function.

2 VCR: Push this button to enter into VCR Playback/Zoom operation. In this mode, the output video is displaying the video signal from VCR. When operated in Full Screen display mode, push select buttons (#5) to zoom any specific camera signal pre-recorded on the tape in quad format. Push the select button (#5) again to freeze the expanded picture on the screen.

VCR button (#2)	Quad button (#4)	CH Select button (#5)	Function
ON	ON	OFF	Display quad video signal from VCR tape
ON	OFF	Push Once	Call up specific quadrant from tape in full screen mode
ON	OFF	Push Twice	Freeze specific quadrant from tape in full screen mode
OFF	X	X	Exit VCR operation and back to normal operation mode

#1, #2 Setup buttons: Push these two buttons simultaneously to get into Menu Setup mode and display page 1 of system setup menu. Push these two buttons simultaneously again to display page 2 of the setup menu. Use page 1 to program time/date and camera title and page 2 to configure alarm operations. Under menu setup mode, Channel Select buttons (#5) are used for cursor control and text selection to program the setup menu. Push the setup buttons simultaneously again to save the setting. Push the setup buttons fourth time to get back to ordinary operation mode.

Setup buttons (#1, #2)	Function	CH Select buttons (#5)	
		UP, DOWN	< , >
Push once	Page 1 menu for time / date / title programming	Text Selection	Cursor Control
Push twice	Page 2 menu for alarm configuration	Text Selection	Cursor Control
Push the third time	Save the settings	Yes / No	
Push the fourth time	Exit setup mode, back to normal		

3 Sequ.: Push this button to enable full page auto sequencing mode. Push this button again to disable it.

4 : Push this button to switch between Quad/ Full Screen display mode.

5 buttons: When operated in Quad mode, these buttons are used to freeze any specific camera by pushing the corresponding button. When operated in Full Screen display mode, these buttons are used to select specific camera to be displayed in full screen.

Quad button (#4)	Channel Select buttons (#5)	Function
ON	ON	Freeze specific camera video in Quad screen mode
OFF	ON	Call up specific camera video in full screen mode

These buttons are also used as cursor control and text select keys under Setup menu mode.

11.5 Quad Display On-screen Menu

Right after the unit is turned on, The monitor will display the last setting on the Setup Menu.

1. Page 1 of the Setup Menu - Display Setting

Push Setup buttons (#1, #2) simultaneously to display the Setup Menu on the screen. There are total two pages in the Setup Menu. Page 1 is used to program TIME, DATE, and camera TITLE. Page 2 is used to program Alarm Operations. Under this mode, channel selection buttons (#5) on the front panel are used for cursor control and text selection. Use the cursor control buttons "<" and ">" to move the cursor to the location as desired to program, and use the text select buttons "^" and "v" to choose the right alphanumeric character to program.

Page 1: Setting the TIME, DATE, TITLE, and DWELL time:

CH	TITLE		DWELL	TIME
	QUAD			03S
1	CH 1			03 S
2	CH 2			03 S
3	CH 3			03 S
4	CH 4			03 S
LIVE VIDEO FREEZE				ON
VIDEO OUT:		LIVE		QUAD
TITLE:		ON		ON
TIME: 23 : 10 : 10		ON		ON
DATE: 12 - 25 - 2003		ON		ON

1.1 TITLE setup:

The Title menu permits the setup of separate titles for each video channel. 8 characters may be entered for each video channel. The available alphanumeric characters are:

0, 1, 2, 3, 4, 5, 6, 7, 8, 9, A, B, C, D,..... X, Y, Z, . , :, - , / , < , >, ^, v, space ,

1.2 DWELL Time setup:

The Dwell time menu permits setting the dwell time for all cameras and the Quad Screen on the LIVE output channel. The menu shows a table of all cameras and associated dwell time. Dwell time can be programmed by setting a number between 00 to 99 for each channel in the menu.

- 01 through 99: Adds the camera input to the auto switching SEQUENCE, with the corresponding dwell time in seconds.
- 00: Skips the camera input in the auto switching SEQUENCE.

1.3 TIME/DATE setup:

Time and date information can be displayed on the video output channel through both LIVE and QUAD connector. Bottom of page 1 is used to set the values of time and date and also to enable or disable the display at each output channel.

The date and time will display in the "MM-DD-YYYY HH:MM:SS" format for NTSC model and "DD-MM-YYYY HH:MM:SS" format for PAL model.

1.4 TITLE/TIME/DATE disable and enable on LIVE and QUAD video output channel:

The Title/Time/Date display on each output channel can be enabled or disabled by setting ON or OFF in the corresponding entry.

11.5 Quad Display On-screen Menu

2 Page 2 of the setup menu- Alarm Setting

Push Setup buttons (#1, #2) simultaneously and push (#1) button again to display page 2 of the setup menu on the screen. This Alarm Setting menu is used to set the desired alarm configuration like buzzer, V-loss alarm and V-loss relay.

ALARM SETTING

CH	SENSOR	TYPE	STATUS
1	OPEN	NO	ON
2	OPEN	NO	ON
3	OPEN	NO	ON
4	OPEN	NO	ON
SENSITIVITY:			0.3 S
DURATION:			30 S
BUZZER:			ON
V-LOSS ALARM:			ON
V-LOSS RELAY:			OFF

2.1 Sensitivity:
The features are not applicable in these model.

2.2 Alarm Hold Duration:
The features are not applicable in these model.

2.3 Buzzer:
The device has a build-in buzzer to signal a detected alarm through sound. User can choose to disable the buzzer by setting it to OFF.

2.4 V-Loss Alarm:
This entry is used to enable or disable the video loss alarm. The device automatically detects loss of video at any input if this entry is set to ON. User can choose to disable this feature by setting it to OFF for applications like video conferencing or others that will need constant video source switching.

2.5 V-Loss Relay Control:
The device is equipped with an alarm controlled relay, which can be activated by both sensor trigged alarm and video loss alarm. This entry allows user to disable the relay activation from a loss of video in any camera input.

3 Save the settings and exit Setup Menu mode
Push (#1) button again will allow you to save the settings and go back to the normal operation mode and show a quad display on the screen.

11.5 Quad Display On-screen Menu

4: The setup menu can be reset to factory setting by pushing the Setup buttons (#1, #2) and power on the quad simultaneously. The factory setting is as follows:

CH	TITLE		DWELL	TIME
	QUAD			03S
1	CH 1			03 S
2	CH 2			03 S
3	CH 3			03 S
4	CH 4			03 S
LIVE VIDEO FREEZE				ON
VIDEO OUT:		LIVE		QUAD
TITLE:		ON		ON
TIME: 23 : 10 : 10		ON		ON
DATE: 12 - 25 - 2003		ON		ON

ALARM SETTING

CH	SENSOR	TYPE	STATUS
1	OPEN	NO	ON
2	OPEN	NO	ON
3	OPEN	NO	ON
4	OPEN	NO	ON
SENSITIVITY:			0.3 S
DURATION:			30 S
BUZZER:			ON
V-LOSS ALARM:			ON
V-LOSS RELAY:			OFF

5. The Quad Display Mode

5.1 Push Quad display button (#4) to switch between Quad screen and Full screen display mode. Right after you turn on the system, the unit is in the quad mode and displays cameras 1-4.

5.2 Use page 1 of the Setup menu to turn the Title display ON/OFF on each channel and also enable and disable the Time and Date display on LIVE and QUAD output channels.

5.3 Under Quad screen mode, push channel select button to freeze each camera input.

6. The Full Screen Display Mode

6.1 Push Quad button (#4) to OFF to enter Full screen display mode. Under this mode, you may call up any spe cific channel in full screen by simply pushing the corresponding channel selection button.

6.2 Push the Quad button (#4) to ON to return to the quad mode.

7. The Still Frame Display Mode

7.1 If the still screen mode is desired, first turn the quad display button (#4) to ON to set the unit to display in the quad mode. At this time you may press any of the four channel selection buttons (#5) to freeze the corresponding channel.

7.2 Under Zoom On VCR playback mode, if the unit is showing quad screen, pushing the channel selection but tons (#5) will call up the specific channel to display in full screen. Push the same channel selection button again to freeze that channel in full screen.

8. The Auto-Sequence Mode

Push the Sequence button (#3) to ON to set the device to work as a sequencer. Under this mode, the display sequence first starts with a quad screen and then continues to display each camera input in full screen, and then gets back to quad screen and so on. Press the Sequence button (#3) to OFF to release this mode.

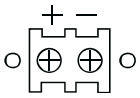
11.6 VCR Operations

Zoom on VCR playback operation:
Push VCR button (#2) to ON will switch the device to VCR playback mode. Under this mode, if the device is on quad display mode, a pr-recorded quad display video in the tape will be shown on the screen. If the device is in Full screen display mode, push any channel select buttons (#5) will select and expand the corresponding quadrants of the pre-

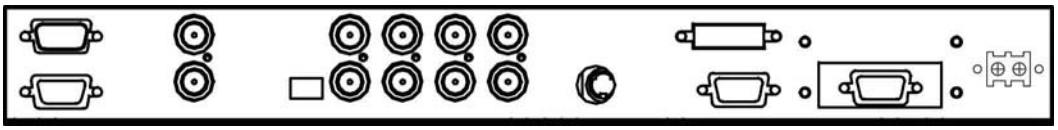
11.6 Quad Display Specifications

Item		Description	
Model Number		QD (NTSC)	QD (PAL)
Number of Color		16.7 M	16.7 M
Imaging System		NTSC	PAL
Resolution		1024 x 525	1024 x 625
Refresh Rate		60	50
Video Input	Camera Input	1.0 Vpp, 75 Ohm x 4	
	VCR Input	1.0 Vpp, 75 Ohm x 1	
Video Output	Live Monitor	1.0 Vpp, 75 Ohm x 1	
	Loop Through Out	1.0 Vpp, 75 Ohm x 4	
	VCR Output	1.0 Vpp, 75 Ohm x 1	
Auto Gain Control		Yes	
Time / Date		Ye	
On Screen Display		Yes	
Camera Title		8 Character Title	
Display Format	2 x Zoom On Playback	Yes	
	QUAD	Yes	
	FULL	Yes	
	SEQUENCY	Yes	
Dwell Time		0 to 99 Sec Adjustable	
Built-in Buzzer		Yes	
Key Lock		Yes	

12.1 DC Power Options

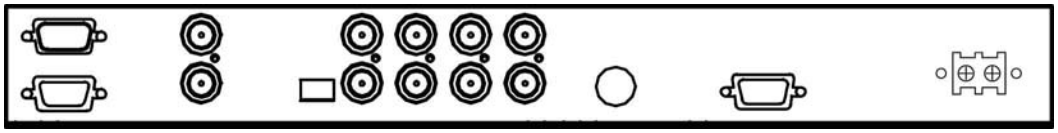


NQW819 & NQW922
NPQ817, NPQ919 & NPQ1020



DC Power input

NQW119 & NPQ120



DC Power input

Model	12V	24V	48V
Input rating			
Input voltage:	12-Volt	24-Volt	48-Volt
Input range:	9 ~ 18V	18 ~ 36V	36 ~ 75V
Input current			
- No load	50 mA	50 mA	50 mA
- Full load	4950 mA	2450 mA	1220 mA
Output rating			
Output voltage:	12-Volt	12-Volt	12-Volt
Output current:	4.16A	4.16A	4.16A
Efficiency	84%	85%	85%

Remarks:

- Package does not include 1 x power cord and 1 x AC power adapter

13.1 Troubleshooting

Chapter 13

1. How do I adjust the resolution?

To change monitor resolution, click Start -> Control Panel -> Display. Select Setting tab to adjust the monitor resolution in Desktop Area. The available resolutions, "640 x 480", "800 x 600", "1024 x 768", "1152 x 864", "1280 x 1024", are determined by the display card in your computer.

2. Is interference signal appeared on LCD normal when shutting down the computer?

In rare cases, interference may appear on the monitor. This may be caused by signal rate of VGA card and is considered normal. The image quality can be improved by adjusting the phase or pixel rate automatically or manually.

3. The membrane power light is not ON

Press the power On / Off on LCD membrane to check if the monitor is in the ON mode.
Check the power cord is properly connected to the LCD keyboard drawer and power outlet.

4. Screen image is not centered or sized properly

Press the button for two seconds to automatically adjust the image.
Adjust the H-position and V-position settings via On-screen menu.

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